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THE QUALIFICATIONS OF THE SURGEON*

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Almost incredible progress has been made in surgery during this wondrous age. The amplification of its uses would be a source of consternation even to our immediate forefathers.

The ever-widening scope of diseased conditions amenable to the beneficences of surgery has brought into requisition a large number of men and a high degree of excellence. No vocation, in fact, demands a higher type of endowment than that of the surgeon.

Can there be any more brilliant achievement than the conquering of the inveterate sufferings, the fatal wounds, or the deadly diseases that lie ensconced in the intricate and almost inaccessible recesses of the human body? It is a hazardous invasion and requires the utmost skill and intrepidity. Any man who has the capabilities and varied faculties that go to make a successful surgeon could so much more easily succeed in some other avocations. He must be a great scientist and a great student whose studentship must continue. Finney has well said: "The science of surgery will always overshadow the art, and unless one is well-grounded in the principles of true scientific surgery, it must degenerate into something of a trade or a sort of sleight-of-hand performance." When the arduous scientific side is mastered, the surgeon must also become a great artist. In pure art all that is essential is the spark of genius. Application does the rest. The surgeon in addition to being a scientist must needs be a highly trained technician. Above all there should be the great heart and impulses of the man.

Celsus, the illustrious Roman, declared that a surgeon should have a firm and steady hand, a keen eye, and the most unflinching courage, which can disregard alike the sight of blood and the cries of the patient. This applied to the physical and temperamental needs of the man during the infliction of great pain on the conscious patient.

Now we have blessed anesthesia by which "the fiercest extremity of suffering has been steeped in the waters of oblivion and the deepest furrow in the knotted brow of agony, has been smoothed away forever." (Oliver Wendell Holmes.) Surgery is concerned not only with grave wounds and injuries, but with myriads of diseased conditions, from those of the new-born babe to those of extreme old age. Women and children are especially in need of its beneficences. The surgeon should, therefore, be a man of the broadest and tenderest sympathies, and one whose kindliness and gentleness are unfailing. "Be ye wise as serpents, gentle as doves." The era of extreme delicacy in the handling of tissues and gentleness of manipulation has come. These are perhaps after all the most important principles of anoci-association.

Can any one fathom the responsibilities of the surgeon? There is scarcely a time in his busy life when he is not confronted with some exceedingly disquieting and all-absorbing case, and no long space of time but measures some appalling disaster that embitters the great service to which his life is consecrated. That great and sound man, Maurice Richardson, whose recent death has bereaved not only New England, but the entire guild of surgeons throughout the world, measured up more than any man of his time to the enormous responsibilities of a surgeon's life. He said in all sincerity:

> The surgeon reviewing his active years of practice cannot but be impressed by the responsibilities of his profession. He recalls the frequent misgivings with which, on the strength of his fallible opinion, he has advised and performed operations; the excitement of a critical operation and the deep breath of thankfulness when he has succeeded in averting some grave complication; his forebodings become realities; the too often useless struggle against overwhelming odds; the distressful death; the severe self-criticism and biting regrets. And is not the surgeon, appreciating his own unfitness in spite of years of devotion, in the position to condemn those who lightly take up such burdens without preparation and too often without conscience?

The first great requirement of the surgeon is a conscience. It should be his constant mentor and the great arbiter of those momentous decisions which come daily to those who combat disease and death and whose efforts are so far-reaching in the preservation of life and in the science of humanity.

In no spirit of vaingloriousness be it said that American surgery at its best represents the very highest type of that art in the civilized world. The surgeons of this country, who are in their prime to-day, represent the pioneers of the new surgery. They are the first generation of men who were educated in the antiseptic era. Their experience has been unprecedented. Much of the newer work has been created by them and has practically all been evolved since their student days. They have been pathfinders. They have had all of the hardships of the early settler. Ambition, resourcefulness, hardihood, adaptation and a devotion worthy of their great calling have made of the active and seasoned men of to-day the brilliant, but practical, intrepid and cautious American surgeons. Taught in the hard school of experience, is it not the duty of this courageous band to plan for the education of the future surgeon? Has not the time come in the evolution of our art when cer-

* The Oration on Surgery read in the Section on Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June 18, 1913

tain requirements should be made; certain qualifications demanded; certain training prescribed to the end that loftier ideals may be established, more perfected and efficient work accomplished and for the faine of American surgery an inextinguishable lamp be lighted?

There is no denying that much of the surgery being done is extremely ill-advised and miserably executed. I am keenly alive to my own shortcomings, and in spite of a fair degree of opportunity and a number of years of more or less diligence, realize how far short I fall of the ideals herein to be expressed. My house is one of such complete transparency that I hesitate to cast a stone. The criticisms, however, are intended as purely constructive.

The increased amount of operative work at this day and the ready acquiescence of individuals who know what has been accomplished enables many general practitioners untrained in surgery and many young men without the leavening experience of general practice to essay the perilous rôle of the surgeon.

Hospitals make the same preparation for all operators alike. With aseptic precautions and rubber gloves many men are able to invade the abdominal cavity and tissues within the body without actually destroying the life of the patient. The mortality, while very much greater than it should be, is not absolutely forbidding, but the morbidity is really incalculable and the results are often valueless if not permanently disabling. Comparatively benign invasion of structures is only the beginning of surgery. Any house surgeon should be able to do this. Cure with a minimum of risk and a maximum of results should be the end and aim. As Finney has said "None knows better than the experienced surgeon how far-reaching are the possibilities for good or evil lurking behind every surgical procedure." Therefore, the indication should be exceedingly clear, the need great and all of the safeguarding and exacting conditions fulfilled. The unnecessary operation is the crying shame of present-day surgery. These are performed by the operator, not by the surgeon. There is a vast distinction between an operator and a surgeon. There are many of the former but few of the latter class, comprehending as it does men of saneness, probity and judgment. How difficult is the acquisition of surgical judgment! Judgment is the queen of mental attributes in the ordinary affairs of life; but how all-important and responsible is the exercise of that judgment, even if acquired, when brought to bear on the health, the limb and life that is so trustingly and confidently placed in the hands of that man who alone can restore it!

Would that another Senn could arise and rebuke us for our furore to do surgery. It would indeed require the stentorian voice of a great leader to stem the tide of the unnecessary surgical operations of our day. Is it not a castigation when a humorous periodical says, "If you go to the doctor's office sufficiently often, you will be operated on?" This is the result of many contributing factors; bad judgment, inexperience, an overweening desire to do surgery, the ease and facility with which all of the drudgery can be avoided in the hospital, the surgical exploitation of the neurasthenic and, lastly, let it be sorrowfully said, the commercial spirit which has raised its hydra head in all its monstrousness among us. Would that it could be cast out! It must be! yea, it will be, and largely by the individual and united efforts of the members of the Section on Surgery of the American Medical Association.

Nebraska has passed a law making it a penal offence for a commission to be offered or accepted, or for fee-splitting to be practiced in any form. Every state should have such a law, unless the profession can clean its Augean stables within its own ranks.

The most dangerous operator is not the enthusiastic beginner, because he will learn; not the antiquated back number, because he will die; but it is the occasional operator, the general practitioner without special training and the young man whose only preparation consists in the ordinary undergraduate work of the average medical college.

As the Nestor of surgery in this country, Halstead, that great teacher, has said, in his memorable address on "The Training of the Surgeon," the interne "suffers not only from inexperience, but also from overexperience. He has in his short term of service responsibilities which are too great for him; he becomes accustomed to act without preparation and acquires a confidence in himself and a self-complacency which may be useful in times of emergency, but which tend to blind him to his inadequacy and to warp his career."

Unfortunately, a great deal of serious surgery is attempted by men with the most meager opportunities and the frailest ability. It is as cheap to prepare to be this kind of a surgeon as to follow any other line of medicine and it is attractive not only to the purely ambitious, but to the avaricious. It is not a question of the patient's well-being, but the commercial value of the patient; one might almost say the commercial value of human life.

It is an exceedingly difficult matter for any one of us to appreciate our limitations. Is it not a fact that the surgeon in one field who takes cases in a remote field with which he is not familiar is more guilty than the practitioner who occasionally does some simple form of surgery, although not quite so well trained to do it as the surgical specialist?

Dr. Stuart McGuire has said, "No conscientious surgeon should undertake an operation without asking himself whether he has the skill to do the work satisfactorily."

The great middle class are the greatest sufferers from surgical delinquencies. The poor are safeguarded by their poverty, which necessitates their going to the charity clinics. These are as a rule competently manned. The rich are protected by their knowledge and cultivated habit of seeking the best. It is the large middle class, who are able to pay moderately for what they get and who think one doctor is about as good as another, that get the most indifferent service.

The multiplication of the small hospitals in the smaller cities and towns has undoubtedly ministered to many sufferers in a satisfactory manner. After all, the size of the town does not matter, but the size of the man does. If one man in a community can by natural aptitude, innate ability and good training establish or be put at the head of a well-ordered hospital, the character of the work will be high. Such a man will command the cooperation of his confréres. It is a distinct mistake, however, to encourage four or five men in a town where there are from six to twelve practitioners to believe that each one can do the surgery that may come to him. They do not or cannot have a sufficient number of serious cases to make them all competent, even granting they have the ability and previous training. It is a mistake for a young man to go out with his one year's experience in hospital work and give out the statement

on his cards and otherwise that he is to do surgery exclusively. If young men are permitted to enter surgery without experience or training and to say that they will displace their elders, still other young men will come on and displace them, so whether the surgical work comes early or late it will last only for about the same period of time. The objection to adequate preparation on the ground that the surgeon will be an old man before he starts is not valid.

As Halstead says:

> The faults of our system of educating surgeons begin almost at the bottom and continue to the very top. I am considering only the training of the best men, those who aspire to the higher career in surgery. On graduation they become hospital interns, but their term in the hospital is only one and a half, occasionally two years, only a little longer than the term of hospital service required in Germany of every applicant for the medical degree, and not so long, on the average, as that required of each medical graduate of the University of Tokio.

The foundation for improved conditions in our profession must be in more efficient education. In less than ten years the Council on Medical Education of the American Medical Association has done a prodigious work. The Council found that in this country there existed 166 medical colleges, which was one less than existed in the remainder of the civilized world. As a result of the investigation, classification and publication of the work of this council, sixty-five of these colleges have been merged to make stronger ones, or have become extinct. Many of this latter type were a disgrace. There are about 112 medical colleges in the United States now. When we realize that there are only twenty universities in the German Empire, it is obvious that in America we have an oversupply, and a further reduction, in the light of modern educational demands, is inevitable. Already the large majority of low-grade colleges are not fully recognized by some twenty-four state licensing boards.

Stupendous improvements have been made. The four-year course is universal. A four-year high-school course is the minimum requirement for entrance. All of the better colleges have adopted in addition a premedical year of chemistry, physics, biology and a modern language, which goes into effect in January, 1914. Thirty-two medical colleges require as a minimum for entrance two or more years of college work in addition to the four-year high-school course. There will not be an increased college requirement, because that would keep the man too long and he should not be over 24 or 25 years of age when he begins his life work.

The next and much-needed advance is the compulsory or fifth year spent as a hospital intern. The council on education is now preparing data for this work. While the council has, of course, no legal function, still, if it can do the investigative and standardizing work for the hospitals in this country that it did for the medical colleges, it will do great good. In connection with the Council, the Carnegie Teaching for the Advancement of Learning signified its willingness to help. A munificent endowment has been set aside for this work. It will consist of an intensive investigation of the hospitals in the thirty-five most populous centers, together with the inspection of all the hospitals in this country. They will be classified somewhat similarly to the colleges. The basis of classification being the number of beds, the amount of endowment or appropriation for their support, the equipment and laboratory facilities, the methods of organization and willingness to furnish proper training for medical students. At present there are a total of about 3,000 interns. The combined graduating classes equal about 4,500 students. This still leaves about 1,500 graduates for whom hospital internships should be provided if the internship year becomes compulsory. As about 1,400 hospitals, having approximately 3,500 beds, have no interns, it seems that this matter could be easily arranged. I have referred to this matter only from the intern's standpoint, but it is apparent that the good accruing to the hospitals themselves, the general uplift from more detailed information as to their needs, and a constructive policy for betterment are benefits almost incomparable.

Even now over one-half of the high-grade colleges placed 70 per cent. of their graduates in hospital positions last year. Some such arrangement as withholding a license to practice until after the hospital year has been satisfactorily completed would be very desirable. Let final examinations occur at the end of the fourth year, but licensure should not be completed until the hospital service is finished.

Every hospital should require the most promising of the interns to continue their service into the second or third year as house surgeons. This not only gives the capable man longer training, but also is a protection when the house staff changes; it is a great help to the new interns; a stimulus to their best efforts and the only way to keep up the traditions, methods and *esprit de corps*. Whenever possible the large hospitals should inaugurate the system of having a resident surgeon, choosing the exceptional man, whose tenure should be indeterminate. This increased opportunity for surgical training and the prolonged inspiration of his chief would afford the best of facilities for a great surgical career.

Quoting again from Halstead:

> It is a grave mistake, it is a shame, to check suddenly the advance of these superior young men, who are tense with enthusiasm, who rejoice in the work to which they hope to be able to dedicate their lives. It is from these men, we must not forget, that our teachers of surgery are made.

The foundation in Washington last month of the American College of Surgeons, which has for its purpose the elevation and standardization of surgery for the benefit of the profession and the protection of the people by the granting of a fellowship to all men whose surgeonship is established and the conferring of the title F. A. C. S., which will indicate to the public and the profession that its possessor is well qualified to practice this branch of the profession as a specialty, seems to give form to the movement for increased requirements and the maintenance of a higher standard. The college is to be independent of all societies, continental in scope, democratic in spirit and eventually to comprise all of the men in the United States and Canada who are properly qualified and so to designate them.

It is to be presided over by a board of governors, elected by the college. A board of regents, chosen by the governors, acting as trustees, will from time to time establish requirements for the granting of fellowships. All surgeons of prominence having had five years in the practice of surgery, or one of its specialties, who are of unquestioned moral character, measured by the standard of the college, and who are vouched for by the committee on credentials, are eligible to fellowship without examination.

Ultimately, the college will formulate prescribed requirements, with examination, for the younger men

who are candidates for the fellowship. Already the founders represent every large city in America; all of the medical universities; all of the general and special surgical societies; all of the important hospitals and clinics, and a large number of independent surgeons throughout the continent.

It seems that this movement is of transcendent importance. If all of the good men who are properly qualified become Fellows of the American College of Surgeons, and those who morally and educationally are unfit to do surgery are not accepted, it will be a crystallization of the high ideals for which the American Medical Association has always stood.

Every man who expects to practice surgery as a specialty should be required to act as chief assistant to a master surgeon for at least three years, and better five. It will be objected that this is too long, but the goal is not for those who soon weary of study and protracted preparation. Apprenticeship is far more essential in surgery than in any of the arts in which it is universal. A man is obliged to act as apprentice a specified number of years before he is allowed to pilot a lumber scow. Who asks to see the pilot's license when a surgeon is needed to pilot the frail bark of life through the treacherous "waters that separate the island of Time from the mainland of Eternity"?

We need a system of requirements and a course of training, and they surely will be realized, that will make of the first youths of our land what their abilities and ambitions entitle them to be, will attract to surgery the very best material and will make of the rank and file well-equipped and conscientious surgeons.

As suggestive the following outline of requirements is formulated:

1. A full four-year medical course in a high-grade medical college or university, leading to the degree of M.D., after adequate high-school and the special one-year premedical science course in college. It is especially desirable that, in addition to thorough fundamental and laboratory training in anatomy, physiology, pathology and bacteriology, such schools provide ample, practical instruction in dispensary and ward classes in medicine, surgery and the specialties, with practical midwifery and post-mortem work.

2. Compulsory hospital internship in a good general hospital, with adequate laboratory facilities, for at least one year and if possible two years.

3. Certain high-grade colleges maintaining or controlling exceptionally good hospitals should be encouraged to give a one-year graduate course in surgery after two or more years' hospital work, or after three to five years of general practice leading to the degree of master of surgery, which in addition to practical hospital work should thoroughly teach gross pathology, operative surgery on the cadaver, perfected technical work on the viscera of slaughtered animals, and experimental surgery on the lower animals. The student should be brought into close touch with the research laboratory. This would fill a great want. So many well-prepared and ambitious young men after being in practice for several years and doing some surgery with more or less success, are anxious and clamorous to take additional work, to which they are willing to give the required time and for which they are willing to pay. They importune many individual surgeons to take them as private assistants. The strictly postgraduate schools have been of considerable value to such men, but as a rule the courses are not long enough.

4. In addition to a compulsory hospital internship before licensure, a specified number of years of general practice, or extra years in a hospital, should be required of those who would make surgery a specialty. No man can become a good surgeon without the illuminating experience of general practice.

5. Before taking up surgery, a man should be required to serve at least three years as assistant to an established surgeon.

6. The requirements need not be quite so exacting for the aural or ophthalmic surgeon, but should embrace as a minimum at least two years' hospital work, one year in general and one year in special work, the latter to follow at least two or three years in general practice.

7. It would seem desirable that a prescribed course of study and training somewhat in conformity with the foregoing should be followed by examination and conferring of a distinctive title to distinguish the surgeon from the internist.

8. The establishment of certain legal requirements for the practice of surgery, to be enacted into a uniform state law, or if possible into federal law, providing for special examination and licensure. Such a law was introduced into the Illinois legislature at its last session and embodied most of the suggestions herein set forth.

In the making and maintaining of a high degree of surgeonship, the value of travel and studying the work of the great clinicians of our country, as well as those of Europe, cannot be too forcefully urged. Kocher has been the traveler of Europe, and the men who have the greatest clinics of America are themselves the greatest observers of the work of others.

The obligation of the profession in medicine, as well as in surgery, is a very sacred one. It must be our constant endeavor, by the unwritten laws of custom, by the force of speech, by ethical regulation in the profession, by educational betterment and by statutory enactment, to safeguard the traditions and ideals of the profession and fulfil our highest obligation in caring for the lives, the health and the happiness of the people of this country.

148 Eighth Avenue North.

ONE HUNDRED AND SEVENTEEN CASES OF INFANTILE DIARRHEA TREATED BY INTESTINAL IMPLANTATION OF THE BACILLUS LACTIS BULGARICUS AT THE BABIES' HOSPITAL OF THE CITY OF NEW YORK*

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When I presented my report[1] on this subject last year before the New York Academy of Medicine, some of my colleagues were decidedly skeptical of my results. Moreover, they felt that it would be hazardous to adopt such radical measures as I had employed; and they were loath to proceed with the courage necessary to achieve success. As emphasized in an editorial[2] in the *Archives of Pediatrics*, it does require courage to use this method of treatment in all cases; but if the beaten path were always followed by every one, the practice of medicine would not have attained its present high standard.

In my former paper I stated that "a starvation diet, accompanied by purgation, is productive of loss of weight and strength, and serves to prolong the course

* Read by invitation before the New England Pediatric Society, April 25, 1913.

1. Clock, Ralph Oakley: Intestinal Implantation of the Bacillus Lactis Bulgaricus in Certain Intestinal Conditions of Infants, with Report of Cases, THE JOURNAL A. M. A., June 29, 1912, p. 2017.

2. Arch. of Pediat., August, 1912, p. 561.

of the disease." I call attention to this statement now, because too much emphasis cannot be laid on this point; and the results herein chronicled will, I believe, leave no doubt as to the superiority of the implantation treatment and the fallacy of a starvation diet.

The present work was undertaken in order to corroborate or disprove the results obtained in my private cases, which were presented in my initial paper. Through the courtesy of Dr. Royal Storrs Haynes, arrangements were made whereby all cases of infantile diarrhea in his division of the outpatient department of the Babies' Hospital of the City of New York were placed on the implantation method of treatment during the summer months of 1912.

The patients were treated by various members of the outpatient department staff, all working in collaboration under my supervision. Hence, the personal element in the treatment was eliminated. Clinical observations were made on the material which we had at our disposal, every case of diarrhea being immediately placed on this special, but simple, treatment. Therefore, there was no selection of cases. In contrast to the conditions which obtained in the homes of my private patients, the hygienic environment of these hospital patients did not in any way favorably aid the treatment; for the hygienic conditions of the homes of most of these patients were of the poorest. Moreover, it would have been difficult to secure from the mothers proper cooperation along dietary lines; but the feeling is deeply rooted in these women that "medicines" will cure their babies; hence, they used the tablets without question. The patients were seen only every two days, in other words, three days a week. It was not always possible to see a specimen of the stools for each day, so that we often had to record the mothers' reports on this point. But we had two other very reliable and important guides as to the effect of the treatment; namely, the weight and the general condition of the patients.

Unfortunately, we were not able to make a bacteriologic classification of the cases, and thus complete the twofold value of the work. But the clinical results were very striking; and they proved most emphatically the rationale of our treatment.

NUMBER AND AGE OF PATIENTS

The total number of patients treated was 117; of this number, 116 recovered and one died. This one death occurred in a severe case of enterocolitis which had persisted for two weeks before receiving any treatment. The patient's condition was highly toxic and, after one week's treatment in the clinic, the baby was transferred to the wards of a hospital where it could be kept under daily observation.

Seventy-two of the 116 patients who recovered returned to the dispensary during the winter with some other affection; so we know their recovery was permanent. The remaining forty-four patients were called on by the visiting nurse to ascertain whether they were still living. She reported that three of the patients had moved away from the city and could not be traced; but the other forty-one were in good health. Therefore, our recoveries were not temporary but permanent.

The babies varied in age from 6 weeks to 2½ years; there was one 6 weeks old; two were 2 months old; ten were 3 months old; five were 4 months old; two were 5 months old; twelve were 6 months old; twelve were 7 months old; four were 8 months old; three were 9 months old; eleven were 10 months old; eight were 11 months old; fourteen were 12 months old; five were 13 months old; two were 14 months old; four were 15 months old; three were 16 months old; nine were 17 months old; two were 18 months old; two were 19 months old; one was 22 months old; four were 2 years of age; and one was 2½ years old.

CONDITIONS

Types.—The intestinal conditions included four cases of enterocolitis and 113 cases of gastro-enteritis; of the latter, 47 were of the mild form; 52 were of the severe type, and 14 were toxic.

Duration.—The average period of time that the condition had lasted, prior to instituting treatment, was one week; the longest duration of the condition, before treatment, was three weeks, and the shortest period was two days.

Number and Character of Stools.—In 46 cases, the number of stools per day, before treatment, was from 10 to 15; and in the remaining 71 cases, the number varied from 6 to 10. The general character of the stools was loose or watery; they were green in color, had an offensive odor, and contained varying amounts of curds, mucus, or blood. Mucus occurred in 63 cases, and blood was present in 18 cases before treatment.

Vomiting.—This had been present in 70 of the cases. Many of these patients had been troubled with persistent vomiting, all food being rejected soon after it was taken.

Fever.—This was present in 49 cases; the temperature ranged from 100.2 F. to 104.2 F.

Diets.—Sixteen patients were breast-fed and 101 were bottle-fed. The diets of those that were bottle-fed consisted of the following: (1) top milk formulas with cane sugar; (2) modified milk with dextrimaltose; (3) modified milk with milk-sugar; (4) milk modified with proprietary foods; (5) whole milk and water; (6) pasteurized milk formulas; (7) barley water; (8) barley water and proprietary foods; (9) barley water and boiled milk; (10) barley water and skimmed milk; (11) barley water and whole milk; (12) mixed dietary of whole milk, cereals, soups, etc.

TREATMENT

Method.—The treatment consisted of the administration of a pure culture of the true *Bacillus lactis bulgaricus*—the Type A organism, which was isolated from Bulgarian soured milk (yoghurt) and first described by Grigoroff[3] of Massol's laboratory at Geneva. This culture was imported through the Johns Hopkins Hospital and elaborated in tablet form in the Hynson Westcott Laboratories at Baltimore. One or two tablets were usually given every two or three hours; but, in severe cases, two or even three tablets were given every two or three hours *before* and *after* each feeding—making a total, in some cases, of forty-two tablets in twenty-four hours.

Diets During Treatment.—Seventy-four babies were continued on their respective milk diets; among this number were four breast-fed babies, ranging in age from 12 to 15 months, who were removed from the breast and placed on bottle-feeding composed of equal parts of whole milk and water; and twenty-three babies between 15 months and 2½ years of age who were continued on their mixed dietaries of milk, cereals, soups, etc. This number also includes twelve babies who were continued on breast-feedings, and thirty-five

3. Grigoroff: Etude sur un lait fermenté comestible; le kisselo mleko de Bulgarie, Rev. méd. de la Suisse rom., 1905, xxv, 714.

babies who were continued on their regular milk mixtures or on their regular mixtures slightly diluted with water.

The remaining forty-three patients were placed on a starvation diet of barley water for twenty-four to forty-eight hours, after which small quantities of boiled, skimmed or whole milk were usually added to the diet.

Cathartic.—Twenty-nine of the forty-three patients who were on a starvation diet were given a preliminary dose of castor oil. No cathartic, however, was given to any of the patients who were on a milk diet.

Signs of Improvement.—Improvement under the implantation method of treatment was shown by three cardinal signs: (1) gain in weight; (2) rapid change in character of the stools to normal color and consistency, regardless of their number; (3) improved general condition of the patients as evidenced by (1) improved appetite, (2) subsidence of fever, (3) abatement of vomiting, and (4) better appearance.

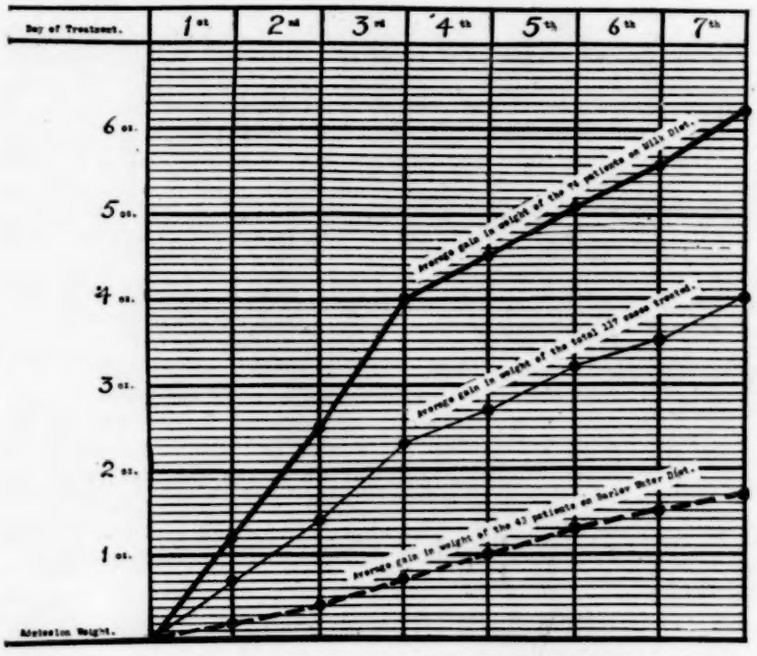

Diagram showing the average increase in weight during the first week of treatment by the implantation method. The heavy horizontal lines represent ounces; the light horizontal lines represent tenths of ounces.

RESULTS OF TREATMENT

Stools.—The number of stools usually decreased very rapidly, although this did not always follow. In eleven cases the number of stools continued to be excessive even when the color had become normal; but the babies gained in weight nevertheless, so that the large number of stools had no deleterious effect on the patients. In one case there were twenty stools passed in two days, but the baby made a steady gain in weight.

The average time required for the stools to become yellow was 3.1 days. Mucus and blood invariably disappeared from the stools on the second day. This is a point which I did not sufficiently emphasize in my former paper.

Vomiting.—As a rule, vomiting likewise ceased on the second day of treatment.

Appetite and Fever.—The appetite improved, and the fever practically subsided on the second day. The mother's report usually was: "Baby takes his food better; he sleeps better, and his fever is gone." The improvement in the appetite and the drop in the temperature always occurred at least twenty-four hours prior to the stools becoming yellow.

Weight.—The most striking feature in the treatment of these cases was the phenomenal gain in weight. Such emphatic and conclusive results, as shown by the increase in weights, fully justify the adoption of this method of treating infantile diarrheas. It is well to bear in mind, however, that the gain in weight which occurred in these cases was in no sense the gain such as occurs in children showing edema—the so-called edema of malnutrition. Moreover, the increases in weight were permanent; a relapse did not occur except in one case, the history of which is herein recorded.

Greatest Gain and Loss.—The greatest single gains in weight were 4 ounces in two days and 10 ounces in five days; while the average gain was 0.7 of an ounce in the first twenty-four hours. The greatest loss was 4 ounces in three days—this occurred in a patient who was on a barley-water diet.

Relation of Weight to Diet.—Every patient who was either breast-fed or given a modified milk diet, or a diet of milk and water, or a dietary of milk and other foods, gained rapidly in weight. These comprise seventy-four out of the total number of 117 patients treated. The other forty-three patients—twenty-nine of whom were given a cathartic—were on a starvation diet of barley-water for the first twenty-four or forty-eight hours, after which small amounts of milk or proprietary foods were added. Twenty-five of these forty-three patients made steady gains in weight, and seventeen of them showed initial losses followed by slow but permanent gains in weight, while one patient suffered a progressive loss, and subsequently died without making any gain in weight.

CASE HISTORY OF PATIENT THAT DIED

History.—This one death occurred in the case of an infant 3 months old who had suffered for two weeks with a severe enterocolitis. The diet had consisted of barley-water and milk. There had been persistent vomiting of all food, associated with bloody diarrhea; the stools were watery, dark green, seven to ten in number, and contained large amounts of blood and mucus. The temperature was 101.2 F. and the weight 9 pounds, 14 ounces.

Treatment and Course.—In this case, two tablets were given every two hours; an initial cathartic of castor oil was prescribed, and the infant was placed on a starvation diet of barley-water. Two days later, the temperature had dropped to 99 F. and vomiting had ceased. The stools were five in number, greenish yellow, and free from blood and mucus. The weight was 9 pounds, 13 ounces. The tablets were continued and a diet of skimmed milk and barley-water was given. At the end of a week, the weight had fallen to 9 pounds, 10 ounces—a loss of 4 ounces in seven days—and the infant was in such a weakened condition that it was transferred to the wards of a hospital, so that it could be observed daily.

AVERAGE GAINS IN WEIGHT

In order to emphasize and, at the same time, compare and contrast the relative average gains in weight of the patients who were placed on a starvation diet with those that were continued on some form of milk diet, I have prepared the accompanying diagram.

The average gain in weight of all the patients that were kept on some form of milk diet from the very first day of the treatment (indicated on the diagram by the heavy, solid line) was 1.2 ounces for the first twenty-four hours, and 6.2 ounces at the end of the first week. These comprise the seventy-four patients who were either breast-fed or who had a modified milk diet, or a diet of milk and water, or a dietary of mixed food.

The forty-three patients—twenty-nine of whom had an initial dose of castor oil—who were placed on a starvation diet of barley-water for twenty-four or forty-eight hours (shown by the heavy, broken line on the diagram), showed an average gain of only 0.2 of an ounce at the end of the first day, and 1.7 ounces at the end of the first week.

Therefore, the babies that were kept on a milk diet showed an average gain in weight, during the *first twenty-four hours,* of only 0.5 of an ounce less than the average gain made in the *entire first week* by the patients who were placed on a starvation diet! In the face of these convincing results, does it seem reasonable for a physician to advocate the old-fashioned method of treating these conditions with a cathartic and a starvation diet?

The average gain in weight of the total number (117) of cases treated (indicated on the diagram by the light, solid line) was 0.7 of an ounce for the first twenty-four hours, and 4 ounces at the end of the first week!

MILK VERSUS STARVATION DIET

The babies that were placed on a starvation diet made on an average very small, but quite uniform gains in weight. The tremendous loss of strength which occurs on a starvation diet robs the system of the opportunity of deriving the maximum benefit from the addition of milk to the diet at the end of forty-eight hours, even though the intestinal condition at that time may be under control. Moreover, during the starvation period there is no adequate supply of available carbohydrate, which is so essential to the rapid proliferation of the *B. lactis bulgaricus.* Hence, the intestinal condition responds less rapidly to the treatment.

In marked contrast to the slow but uniform gain on the barley-water diet is the rapid and abrupt gain in weight when some form of milk diet is used. Here, the increase in weight was very rapid during the first three days. Why? Because, after the putrefactive process had been arrested by the action of the *B. lactis bulgaricus,* the food immediately began to satisfy the caloric needs of the body, and nutrition thus suffered no loss. This explains why the digestive tract, under this method of treatment, can take care of food which previously had caused indigestion and malassimilation. At the end of the first three days, improved assimilation had counterbalanced the loss of nutrition incident to the putrefactive process; and, therefore, the weight curve continues upward but less abruptly, the increase now being more gradual.

In discussing my preliminary report last year, the question was raised as to the advisability of continuing a diet which had been the source of the trouble. I wish to state here that I do not consider the diet to be always the causative factor. On the contrary, the condition is, I believe, more often a bacteriologic one; and, when that has been altered by the *B. lactis bulgaricus,* the food is assimilated and supplies the bodily needs, provided, of course, the diet was a suitable one before the onset of the intestinal condition. Morse[4] has pointed out that "there is a type of diarrhea in infancy, due primarily to bacteria, usually characterized by watery, green, foamy, irritating stools, but sometimes with discharges of mucus and blood; and that this type of diarrhea yields most rapidly to mixtures containing living lactic acid bacteria with a small amount of lactose." The cases reported in my initial paper, as well as those herein recorded, presented precisely this type of diarrhea, which responded immediately to the implantation method of treatment.

COMPARISON OF DIETS

Value of Milk Diet.—The diagram, herewith submitted, of the average gains in weight shows very clearly and conclusively the perfect rationale and superiority of continuing a milk diet, in preference to substituting a starvation diet of barley-water for one or two days.

Value of Implantation Treatment.—In order to emphasize more strongly the value of the implantation method of treatment and, at the same time, to show the fallacy of a barley-water diet, the following case is cited:

A. S., aged 3 months. Gastro-enteritis.

July 1, 1912: Diet had consisted of a Straus milk formula. There had been vomiting and diarrhea for four days; the stools were loose, green, contained mucus and numbered from seven to eight daily. The weight was 8 pounds, 11 ounces. Treatment consisted of a diet of barley-water, given every three hours.

July 3: Condition unchanged. The weight was 8 pounds, 11 ounces. The diet was changed to ½ ounce of boiled milk with 3 ounces of barley-water, given every three hours.

July 5: There was frequent vomiting. The stools were unchanged, and the weight was 8 pounds, 11 ounces.

July 8: The condition and weight were the same, and the same diet was continued.

July 12: Practically no change.

July 15: The amount of milk was increased to 1 ounce at each feeding, with 3 ounces of barley-water.

July 17: The stools were loose, green, with large amounts of mucus, and numbered seven daily. The weight was still 8 pounds, 11 ounces.

You will note that, thus far, the condition had persisted in spite of dietetic treatment; and there had been no gain in weight during a period of over two weeks. On this day (July 17), without changing the diet, bulgara tablets were first administered, one tablet being given before and after each feeding.

July 19: There was no vomiting. There had been four stools in the past twenty-four hours; they were light yellow, perfectly formed, and free from curds and mucus. The weight was 8 pounds, 12 ounces—a gain of 1 ounce in two days! Treatment was continued.

July 22: There were five stools, light yellow and free from mucus. The weight was 9 pounds. The amount of milk was increased to make the mixture one-half milk and one-half barley-water, and the tablets were continued.

July 31: The stools were normal. The weight had increased to 9 pounds, 9 ounces. The diet was changed to a modified milk formula containing cane sugar, and the tablets were continued, one every three hours.

August 5: The infant was in good condition. The stools numbered from two to three daily, and were soft yellow. The weight was 9 pounds, 13 ounces. No change was made in the treatment.

September 4: The mother had been obliged to seek employment and was, therefore, unable to care for the infant, which

4. Morse, John Lovett: Maltose in Infant-Feeding, Am. Jour. of Med. Sc., November, 1912, p. 640.

was admitted to the wards of the Babies' Hospital where it was kept under treatment for three weeks. While in the hospital wards, the baby was placed on a barley-water mixture, and the tablets were discontinued. When discharged from the hospital, the patient was having loose, green, stools. The mother had a few bulgara tablets in her home which were left over from the July clinic. Of her own accord, she gave these tablets to the baby, and the stools became yellow within two days. The weight now (September 4) was 8 pounds, 9 ounces. In other words, during the infant's stay in the hospital wards where its diet had been changed to a barley-water mixture, and where the tablets had been discontinued, the weight had fallen below that which it had been when the implantation treatment was first instituted in the outpatient department. On this first day of the infant's return to the clinic, it was placed on a diet of modified milk with cane sugar, and one tablet was given every three hours.

September 6: There were two, soft, yellow stools. The weight had increased to 8 pounds, 11 ounces—a gain of 2 ounces in two days. Treatment was continued.

September 13: The stools were normal, and the weight had increased to 9 pounds, 3 ounces.

October 4: The baby had made steady improvement and gain in weight had continued. The stools were normal, and the weight was now 10 pounds.

CONCLUSIONS

The most impressive facts, which stand out boldly as the result of this method of treatment, are:

1. The gain in weight, in spite of the number of stools.
2. The rapid change in color of the stools to yellow.
3. The rapid subsidence of fever.
4. Absence of mucus and blood from the stools at the end of forty-eight hours.
5. The fact that the hygienic surroundings of the patients and the degree of intelligence of the mothers had no influence on the results.
6. A starvation diet, accompanied by purgation, is productive of loss of weight and strength, and serves to prolong the course of the disease; and further, such a procedure can no longer be advanced as a rational method of treating infantile diarrhea.
7. The digestive powers in infantile intestinal conditions, even when associated with fever, are not so impaired as to prevent the digestion and assimilation of a milk diet. This fact is corroborated in typhoid fever, where the high calorie diet, in contrast to the starvation diet, has reduced the mortality to a remarkable degree. Moreover, the cases herein recorded prove the value and rationale of continuing a milk diet in infantile intestinal conditions, as illustrated and emphasized in the diagram of the weights.
8. In severe cases, best results are obtained by administering a large number of the tablets during the first two or three days of the treatment. As many as forty-two bulgara tablets in twenty-four hours have been given to very young babies without untoward effects.
9. The implantation method of treatment has progressed beyond the experimental stage, and the results of its use can no longer be questioned or disputed. This treatment has been proved of practical, clinical and scientific value; and its simplicity should appeal to every practitioner.
10. In order to secure the best results, in using the implantation treatment, a pure culture of the true *B. lactis bulgaricus* must be employed; otherwise, disappointment will follow. Bacteriologists recognize the fact that the same organism, isolated from different sources, will vary in its virulence and in certain other characteristics; and the *B. lactis bulgaricus* is no exception to this rule. While similar organisms have been isolated from the soured milks of several eastern countries, namely, Russia,[5] Egypt,[6] Armenia,[7] Syria[8] etc., yet the bacillus isolated from *Bulgarian* soured milk has been proved to possess the greatest antagonism to putrefactive bacteria. Moreover, in using a culture of this organism for implantation treatment, it is essential that the culture show only viable organisms and that these be present in sufficiently large numbers. Without doubt, it has been the lack of a pure, active culture of this bacillus in viable form that has been the cause of the indifferent results obtained in previous years with lactic acid bacterial therapy.

64 East Fifty-Eighth Street.

5. Beijerinck: Arch. néerl. d. sc. exactes, 1889, xxiii, 428.
6. Rist and Khoury: Ann. de l'Inst. Pasteur, 1902, xvi, 65.
7. Duggeli: Centralbl. f. Bakt., 1906, Part 2, xv, 577.
8. White and Avery: Centralbl. f. Bakt., 1909, Part 2, xxv, 161.

SKIN DISEASES AMONG FULL-BLOOD INDIANS OF OKLAHOMA*

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The suggestion of studying skin diseases in the American Indian was first made to me by Dr. Howard Fox, in July, 1910. About that time I also read with much interest an abstract[1] of a report by Dr. Isaac Levin, on "Cancer among the American Indians and Its Bearing on the Ethnologic Distribution of the Disease," laying particular stress on its relative infrequency among the full-bloods, made to the American Institution of Cancer Research, May 2, 1910.

My statistics and reports are largely based on my personal observations and investigations among the full-bloods or so-called "uncivilized tribes" of Western Oklahoma, composed of Arapahoes, Cheyennes, Caddos, Kiawas, including also a small number of Choctaws, Poncas, Wichitas, Seminoles, Delawares and Sioux. These investigations I have made on my own initiative, covering a period of the past eight years as opportunity was afforded. Furthermore, I may say that my diagnoses were not verified by microscope, Wassermann tests, etc., except in a few of the mentioned cases, but were based on clinical findings with only meager history in any case. The examinations of children were made in the different government schools or in the buildings of the agencies, while nearly all of the adults were examined under the most adverse environments. I was courteously received and kindly aided by the agents and physicians in charge of the reservations wherever possible, though I was accompanied most times by only a lazy, illiterate interpreter and made examinations while we both sat flat on the filthy, bespattered dirt floors inside a narrow tent or tepee. Among the conditions we experienced might be mentioned irritating smoke curling slowly from the camp fires around our heads to the vent at the top of the tepee, while the innumerable and ever-present mixed breed of dogs snapped at flies and scratched their prolific crop of parasites at our sides. Nor were our photograph galleries equipped with soft rugs, cushioned chairs or carefully painted backgrounds, but instead consisted of the most level place on the

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

1. I have since received a reprint of this report which has given me much inspiration in my own investigations.

ground with our patient sitting on a stick of wood or perhaps his feet, with dirty canvas—the tepee—for a background; while the subject to be photographed constantly wiggled and changed positions or again stuck out his hand for more shining coins. Under these conditions, I could not obtain with any degree of accuracy information relative to frequency, recurrence, duration of case or the exact age or patient; but only recorded such as my eyes discovered or my interpreter was able to elicit by his sign language. During the full period of my observations, I made a more or less imperfect examination of more than five thousand Indians. In one thousand of this number only was I enabled to partially strip and make a satisfactory examination for all the skin lesions which might be present. I have, therefore, based my estimate among this limited number. As will be observed from the figures given in the table, I have found some diseases named of equal or greater frequency than among the whites. Though let me say here that I am now fully persuaded that this race of people is not subject to the same number and variety of skin lesions as are to be found in our own race.

TABLE 1.—TRIBES AND NUMBER OF CASES EXAMINED

Arapahoes, 337; Cheyennes, 381; Caddos, 310; Kiowas, 135; Wichitas, 70; Seminoles, 58; Choctaws, 47; Apaches, 46; Osages, 63; Delawares, 31; Poncas, 56; Sioux, 38.

Diseases Found	Cases		Remarks
	No.	Per Cent.	
Tuberculosis of cervical lymph-nodes	238	25	Of Arapahoes and Cheyennes.
Lupus	53	3	Of certain tribes.
Syphilis	46	3 to 5	More common in Arap. & Chey.
Pediculosis	186	5	Common.
Tinea circinata	8	.....	Not common.
Pityriasis capitis	210	.....	Limited to those who are or have been in school.
Tinea tonsurans	4	.....	Not common.
Seborrhea	31	.....	Have been in school.
Impetigo	137	6	Of children not in school.
Scabies	4	.....	School children.
Furunculosis	25	.....	Not common.
Variola	5	.....	Sweeps the whole unimmune vicinity when started.
Eczema	39	2	Of adults, dry or squamous type.
Verruca	226	10	Of all tribes.
Acne	212	10 to 20	In "teen" age.
Keloids	13	.....	.....
Nevus	28	.....	Quite common.
Urticaria	4	.....	Not at all common considering their impure food.
Rhinophyma	2	.....	.....
Rosacea	7	.....	Not common.
Keratosis senilis	18	.....	Quite common among the aged.

The following diseases were especially looked for but no case found:

Epithelioma	Sarcoma.
Pellagra	Alopecia
Psoriasis	Ichthyosis
Lichens	Erythema multiforme
Herpes zoster	Erysipelas
Tinea favosa	Sycosis
Dermatitis herpetiformis	

The diseases most common are: nevus, acne, eczema, lupus vulgaris and lupus erythematosus, pityriasis capitis, seborrhea, among schoolchildren; syphilis, verruca, pediculosis, impetigo and other forms of pus infection, and, perhaps the most frequent of all, tuberculosis of the lymph-nodes, particularly in the cervical region.

Without attempting to discuss each disease mentioned in regular order, I might first correct an erroneous idea which I had entertained before the beginning of my investigation, namely, with reference to the frequency of syphilis. I did not find this disease present in so large a number of these aborigines as I had been led to believe by former writers and by my conversations with some of the employees. On the contrary, with the exception of the Arapahoes and a portion of the Cheyennes, I did not find this disease as frequent as among our own highly civilized and—dare I say—over-sexualized race of people. Capt. John H. Seger, of Colony, Oklahoma, who has been with the Indians and connected with the United States Indian Service for more than forty years, and to whom I am much indebted, informs me that syphilis was practically unknown among the Indians until they became intimate with the Mexicans and white races after becoming more civilized. Possibly my findings in this disease may be partially explained by a custom which formerly existed in most tribes, namely, that of allowing the deformed or diseased infant to die without an effort at restoration or, as practiced in earlier days, to be buried alive. From personal observations and from inquiries made of persons long engaged in the Indian service, I believe that their custom of scanty dress and lack of false modesty, from infancy to adult life, or until they are taken into the schools and put under rigid training, has been conducive to less prostitution and the resultant diseases than in our own white race.

One may readily account for the prevalence of impetigo when is seen the real dirt, normal secretions, and excretions of the body which are many times allowed to remain on the skin of their children and helpless babes, until only by chance it is removed.

Again, it is a custom of their medicine men and other would-be assistants to treat open lesions and ulcers or infections, by placing their mouths over these lesions and sucking out, as they term it, the poison of the "witches" or "evil spirits" which has encompassed their bodies, thence going from one to another with their filthy mouths and hands disseminating this infection to all with whom they come in contact. This filthy mouth may soon join in a circle of bucks seated on the ground, passing the common "pipe of peace" from mouth to mouth until all have had an equal smoke and the pipe is empty.

Notwithstanding that the pediculus is an almost ever-present organism, I was impressed with the rarity of the ordinary resultant pustules and excoriations so characteristic in the infected white person.

The enthusiast on dietetics, among our numbers, might find food for thought and partially verify his claims for the meat-eaters, for Indians have eczema, though we found the percentage among these tribes not so high as that given in the table of the American Dermatological Association.[2] The forms are chiefly the dry squamous or the papular variety.

The extreme rarity of dermatitis medicamentosa, dermatitis venenata and other acute forms, may partially be accounted for by the lack of common usage of drugs, soaps, and other chemicals, though the Indians frequently apply quite freely on their faces and other exposed parts, paints and dyes made from the wild plants, berries, etc.

The skin of the Indian is apparently almost immune to the poison-ivy and other plants which cause so much discomfort to the women of our own race.

Their simple menu, consisting chiefly of a few of the vegetable roots, beans, corn, and meats of the wild animals, and beeves, dried or raw, or, as is many times the case, partially decomposed flesh of an animal having died of disease, does not predispose to gluttony with resultant urticaria, erythema multiforme, etc. No typi-

2. Stelwagon, Henry W.: Essentials of Diseases of the Skin, p. 280.

cal case of erythema multiforme was observed in my entire investigations and but few cases of urticaria.

Neither does the Indian's well-balanced and never overtaxed nervous system predispose to lichen planus, pruritus, hyperesthesias, and other neurocutaneous diseases. His meals are deliberately eaten and with full relish, but on account of its poor quality he has considerable trouble with his stomach and bowels, though with but few manifest symptoms on his skin.

Nature's adornment and protector of their heads—their hair—is to be envied by our ladies who are constantly adding to their own more of a foreign make. Not a bald-headed Indian of either sex was observed among the total number examined. Syphilis does not seem so conspicuously to affect their hair as it does that of the whites. The color of the hair in the full-bloods, in nearly all tribes, is the monotonous coarse-black or dark brown. Two cases of deep red hair were noted in the Delawares, though it was quite evident that they were not full-bloods. Their almost constantly bared heads render their scalp diseases few. Only four cases of tinea tonsurans were found, though there were many cases of pityriasis capitis, commonly known as dandruff. The latter disease is quite definitely limited to those who are at present, or have been in the past, closely confined in schools and made to carry out the rigid regimen of the use of comb and brush. In one school nearly 60 per cent. of the children above 12 years of age were affected with this disease. Practically no pityriasis capitis or seborrhea was found in the older and unconfined of the tribes, which further confirms the later accepted theories as to its etiology.

Only brief observations among full-blood Indians of Oklahoma are necessary to impress one with the prevalence of tuberculosis of the lymph-nodes. This disease seems to have a special selection for the lymph-nodes in the cervical and submaxillary regions, both anterior and posterior chains. It seems to be an infection which most readily attacks the young, beginning in many cases as early as the first or second years of age and continuing until after the age of 25 or 30, when most patients appear to have recovered. No doubt many of them succumb to its invasion of other organs of the body, for I observed several cases of tuberculosis of the bowels, and tuberculous peritonitis, which I am quite sure was an extension of the infection beginning in the cervical region. Just why tuberculous infection of the cervical lymph-nodes is so much more prevalent in this race than in our own is a question for solution. It may be because tuberculosis in general is so very common. I have also learned by numerous radiographs of the Indians that a large number recover from the pulmonary type of this disease. It is probably due, however, to the frequent occurrence of follicular tonsillitis, quinsy, etc., leaving the throat in a receptive condition for the tubercle bacillus, which, perhaps, lurks in the numerous meals of tuberculous meats on which he feasts without a qualm. The percentage of such diseases among the Indians is so high that I believe the special attention of the United States Indian Service should be called to it, so that such steps may be taken toward prevention of this initial infection as have been recently taken with reference to diseases of the eye among them.

Not a single case of that disease which is becoming so alarmingly prevalent in the United States, namely, pellagra, have I observed, nor have I had any reported by any of the physicians in charge of the Indians. The Indians, too, subsist mostly on the poorest quality of corn and many times spoiled foods and always endeavor to pitch their portable dwellings on the banks of the nearest stream of water.

In my examination of the different tribes and through inquiries of agents and physicians in charge, I made particular search for epitheliomas or any other superficial, malignant growths, without a single case having been fully verified as such. Dr. Roland of Muskogee, reports having seen one case of probable epithelioma situated just above the eyelid in an old Indian but this lesion was not verified microscopically and Dr. Roland admits that there is a probability of its being only an extended verruca.

Drs. C. R. Hume, Anadarko, A. L. Blesh, Oklahoma City, and F. H. Clark, El Reno, each report having seen a case which they diagnosed as cancer of internal organs, though their cases were not fully verified.

The report from Dr. Isaac Levin, previously mentioned, showed but twenty-nine cases of cancer among all the tribes throughout the United States. Also, not one of the cases reported was from Oklahoma.

Compare, if you please, an equal population, throughout the States, of our own race and we have some interesting data which should inspire a further investigation into the etiology and propagation of this dread disease.

The mortality statistics of the United States from eighteen states for the year 1900 gives 63.9 deaths from cancer per hundred thousand, and in 1909, 79.6. The same report from the same states gives us a total of 425 deaths from skin cancer alone from 1900 to 1909.

CONCLUSIONS

1. The full-blood Indian is not subject to the variety of dermatologic lesions found in the white race.

2. Full-blood Indians are almost free from such skin diseases as may be produced or excited by menstrual disorders or an overtaxed nervous system.

3. Though their food is limited in variety and poor in quality, they do not have many of the skin lesions which we ordinarily attribute to such causes.

4. Previous to civilization, baldness was probably unknown among the American Indians.

5. While syphilis is common among the different tribes, it is not so prevalent as the sensationalist would have us believe.

6. Tuberculosis of the lymph-nodes, particularly of the cervical region, is very prevalent and might be largely prevented if more prophylactic measures were enforced by our United States Indian Service.

7. The uncivilized Indian apparently is yet free from pellagra and almost immune to cancer.

Might we not find in a study of his simple outdoor life, limited foods, the character of his skin, etc., a clue which may lend material aid in the discovery of the etiology and propagation of these diseases among our own race of people?

ABSTRACT OF DISCUSSION

Dr. Howard Fox, New York: I have been particularly interested in this paper on account of the studies which I made among the negroes several years ago. In quite a number of instances, the skin diseases common in these two races correspond very closely, while in others they are diametrically opposite. For instance, the negro is practically exempt from psoriasis, and Dr. Lain has made the same observation of the Indian. The same is true of dermatitis venenata due to ivy poisoning; the full-blooded negro, while perhaps not absolutely immune to this infection, certainly does not suffer from it as does the white man. These are two points of similarity observed in these two races, but there are several other points in which our observations are quite dis-

similar. Dr. Lain found many cases of pediculosis capitis among the Indians, while I found very few such cases among the negroes. Tinea is quite as common in the negro as in the white. Pellagra is very common among them, and I was surprised that Dr. Lain did not find a single case among the Indians.

DR. M. L. RAVITCH, Louisville: In addition to the points of similarity already mentioned in the skin affections common to the negro and the Indian races, I would include the tuberculous and the syphilitic dermatoses. Pediculosis I have found to be very common among the negroes, and I have also seen a few cases of psoriasis. I think the outdoor life of the Indians keeps them comparatively free from the skin diseases which are more or less prevalent among civilized people. Again, I do not think that the negro, as seen in New York, is of the same type seen in the South; he is a little more civilized and perhaps more apt to acquire the same dermatoses as the white people among whom he lives.

DR. ERNEST DWIGHT CHIPMAN, San Francisco: I think the rarity of certain dermatoses among the Indians is due to the limited opportunity they have had to acquire them. As a possible analogy I might state that in San Francisco scabies was almost non-existent until the time of the Spanish War, when a great many strangers came there; after that, scabies spread with great rapidity. Ringworm, ten years ago, was extremely rare; now it is very common. When the Indians have the same opportunity to acquire the dermatoses of the white race these affections will probably be just as common among them.

DR. A. J. MARKLEY, Denver: Has Dr. Lain observed an increase of tuberculosis among the Indians since they have been confined to certain reservations and fixed habitations? In one of the earlier histories of the Indian race I have read that tuberculosis was practically unknown among them when the country was first settled; also, that tuberculosis of the bones was very rare, although a few instances of tuberculous diseases of the spine were observed.

DR. ISADORE DYER, New Orleans: In this study of skin diseases among the Indians, there seems to be a striking absence of the ulcerative type of skin affections. In the South, among the negroes, we find a large number of such cases either of syphilitic origin or the result of their occupation. Probably the latter factor would account in a large degree for the absence of such lesions among the Indians. The negro in the South lives under conditions of community life which subject him to a variety of diseases that are carried from person to person; while the Indian, on the other hand, spends much of his time out of doors. In considering this general subject, we should regard it from a sociologic rather than from an ethnologic point of view. There is no reason why the Indian, who does not belong to an inferior race, as does the negro, should have the same diseases as the latter, or that the two races should be compared as equal or similar.

DR. M. L. HEIDINGSFELD, Cincinnati: Dr. Lain's paper sets forth one very interesting fact of possibly more historic than practical interest, namely, that syphilis is a rare disease among our American Indians. This is at variance with the much-exploited, but doubtless erroneous, idea that Columbus and his followers brought syphilis for the first time to the peoples of Europe. Careful investigation has shown that syphilis has been pandemic in Europe for ages, as far back as there is any authentic record of medicine. Dr. Lain's observations are in perfect accord with the findings of archeologists who have interested themselves in the study of this question, in relation to our American aborigines. The exhumation of prehistoric bodies has shown no syphilitic changes in the skull and bones of either the mound builders or American Indians. The bones of these peoples, however, have shown changes indicative of tuberculosis.

Recently an extensive exhumation of a large prehistoric burying ground near Cincinnati, showed no changes indicative of syphilis in the bones of the prehistoric tribes. Bodies, however, which were buried with glass beads and other trinkets of a more modern civilization, postdating the discovery of America, occasionally showed changes typical of syphilis.

DR. EVERETT S. LAIN, Oklahoma, Okla.: There is no doubt that the rarity of certain skin diseases among the Indians, particularly those of the contagious type, may be largely due to the habits of this race, living out of doors, as they do, and lacking contact with the weaker races. Their degree of immunity is high; that I have seen demonstrated time and again by their rapid recovery from serious infections.

In answer to Dr. Chipman as to the increase of tuberculosis among the Indians in the reservations, I would say that I began my investigations with that point in view, and in the course of my researches I came across an article dating back to 1746 relating to the Indians residing in or near the eastern portion of the present state of Oklahoma, and the author mentions that a disease which he calls consumption was then quite common among them, and he particularly refers to involvement of the bones. In our museum we have the excavated bones of Indians which show unmistakable evidence of tuberculosis. As to whether this disease is on the increase among them, it is so reported by men who have investigated that feature. The resistive power of the Indian is high. The Indians are practically all affected with tuberculosis, as almost invariably shown by the roentgenographic findings in the lungs. Again, the government physicians tell us that, although they find the disease alarmingly prevalent among the Indians, the percentage of recoveries from it is higher among them than among the whites.

STUDY OF THE COLLATERAL CIRCULATION IN SOME CASES OF SPONTANEOUS GANGRENE OF THE FOOT*

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When disease interferes with the volume of blood which passes along an artery, the tissues which its terminal branches supply receive less blood than they have been accustomed to. An urgent call passes to the central nervous system, which results in the dilatation of the collateral channels.

On the ability of the collateral channels to carry sufficient blood to the parts demanding it depends their life. It is almost a universal rule that physiologic processes are more than adequate to meet emergencies, for Nature has been generous in this respect; so we find that in the majority of cases arterial blood passes around the obstruction without difficulty and that the peripheral tissues do not suffer materially from the loss of their direct blood-supply.

When the blood-vessels of a limb are healthy, occlusion of the main artery at any one point is rarely followed by more than a temporary anemia of the periphery, and if care is taken in the selection of suitable sites the blood flows through the collateral channels so vigorously that the tissues barely suffer at all. On all the large arteries of the limbs these sites exist, as, for example, the third part of the subclavian and the brachial artery at its middle for the upper extremity; and the external iliac artery and the femoral artery in Hunter's canal for the lower extremity.

Accurate knowledge of the subsidiary or the collateral circulation is scarcely of less importance than that of the direct. Under ordinary circumstances, when the arterial system is healthy and normal, the subsidiary channels dilate the moment the main channel is obstructed and the blood is carried by them to the periph-

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ery so expeditiously that the process is taken as a matter of course. An assumption on the part of the surgeon that the collateral circulation is adequate is unwarranted, and his confidence is often rudely disturbed by disastrous results that occasionally follow some of the routine ligatures of arteries. It is just as necessary for him to be acquainted with the position and patency of the accessory channels as it is for the head of an irrigation farm to know all about his system of irrigation ditches. It is unpardonable to assume that the collateral circulation is competent without making sure of its state of efficiency.

In some regions of the body, for example the arm and leg, these tests can be carried out with a fair degree of accuracy. Thus the arm can be rendered bloodless by being wrapped with an Esmarch bandage. If a tourniquet is now fastened on the upper part of the arm below the axilla the Esmarch bandage can be removed and the limb will still be bloodless. The brachial artery is now compressed against the humerus in such a manner as to obliterate its lumen, but not to stop the collateral circulation, and the tourniquet is removed. If the collateral circulation is competent blood will be seen to pass slowly from above around the obstruction until it finally reaches the finger-tips.

The same test can be applied in the thigh, pressure being applied to the femoral artery in Hunter's canal. In most of the other regions of the body either compression tests such as these are impossible, or it is not feasible to press on the main artery without at the same time exerting pressure on the collateral circulation, so stultifying the results. Under such circumstances it is unjustifiable to ligate the artery boldly and to trust to luck; it is preferable to expose the main arterial trunk by an incision and compress it temporarily by some form of apparatus which will obstruct the lumen. Of the various means that have been employed to accomplish this the simplest seems to be the aluminum band used by Matas. This consists of a flat strip of metal which can be passed around the blood-vessel like an aneurysm needle. The sides of the bent portion are then pressed together between the finger and thumb and the walls of the artery are mechanically brought in contact. (Experimentally, it has been found by Matas and Allen that it is possible to compress a vessel to the point of obliterating the pulse and to maintain the pressure for from three to four days before obliterative endarteritis occurs.)

If the pressure on the walls of the artery has not been excessive no harm is inflicted on the intima, and clotting does not occur. If serious symptoms make their appearance owing to inadequate collateral circulation, the bands can be removed and direct circulation reestablished.

Not only should we have proof that the collateral channels are physiologically competent, but we must know all about them from an anatomic point of view. A few concrete examples will illustrate my meaning:

1. In aneurysms occupying the popliteal artery the obstruction to the direct flow of blood through the main artery is often so complete that the limb is dependent almost entirely on the collateral trunks, namely the upper sural and articular arteries above, and the lower sural and articular arteries below. These collateral channels are in close proximity to the aneurysmal sac, and as the aneurysm enlarges, direct pressure is often made on them with disastrous results (gangrene). These facts should be weighed carefully in the choice of radical operations on aneurysms. The proximity of the collateral channels to the sac wall renders them easily liable to injury during the operation of excision. This operation will thus be seen to be much less safe than the "old operation of Antyllus," and much less desirable than the modern operation of Matas (obliterative endoaneurysmorrhaphy).

2. In ligature of the common iliac artery, great care should be taken not to injure the deep epigastric artery, which is one of the important anastomotic channels carrying blood to the lower extremity. If the transperitoneal operation is performed, it would be safer to make the abdominal incision in the median line and not through the rectus muscle. The same precaution as to injury of this artery should be used in ligature of the external iliac artery, in which the retroperitoneal method is usually employed; although here the anastomoses between the branches of the internal iliac and those of the internal circumflex are usually adequate.

3. In operations on the axilla which may result in obliteration of or removal of a segment of the axillary artery (for example, the old operation on axillary aneurysm or operations for the removal of axillary tumors), one should be careful to preserve from injury, the subscapular artery as well as the lower portion of the axillary vessel from which it arises. The main part of the collateral circulation comes along this trunk from the scapular anastomoses.

4. In operations on the intestines or during the removal of tumors from the mesentery, the course of the blood-vessels must be carefully noted. An accurate knowledge of their situation, and attention to the arrangement of the anastomosing loops, will often permit ligatures to be placed without endangering the circulation of the intestine, and will allow the removal of some tumors without resort to enterectomy.

In extensive operations on the rectum and sigmoid flexure the same careful selection of sites for ligatures will enable the surgeon to straighten out the intestine and render it so mobile that the sigmoid can often be drawn down to a sacral anus without interfering disastrously with its vascular supply.

With these introductory remarks, I will pass at once to the fundamental object of my paper, which is to present a few interesting facts concerning the collateral circulation in spontaneous gangrene of the lower extremity.

I have chosen three cases of gangrene to illustrate it, one of Raynaud's type, the other two of the senile form.

REPORT OF CASES

CASE 1.—Man, white, aged 39. Spontaneous gangrene of the big toe of the right foot. Clear history of temporary ischemic attacks for at least a year before the appearance of the gangrene. Onychia appeared and the nail was avulsed. Gangrene appeared in the matrix and spread very slowly, advancing by fits and starts, and taking about four months to reach the metacarpo-phalangeal joint. Suddenly the circulation of the four outer toes was threatened and the patient consented to amputation.

***Operation.*—At the patient's request a disarticulation through the knee-joint was first made. The popliteal artery was completely blocked up with partially organized clot. A second amputation through the lower third of the thigh was made at once. The femoral artery at this level was filled with soft recent clot which was picked out with forceps. After the tourniquet was removed the ligatured femoral artery pulsated fairly vigorously and the terminal branches of the profunda femoris bled very freely. The amputation stump healed by first intention.**

Dissection.—1. The femoral artery at the site of the upper amputation was filled with recent clot which could be removed easily.

2. The popliteal artery was completely filled with old standing partly organized clot.

3. The anterior tibial artery was atheromatous but was patent and contained no clot. All the blood passing to the foot had coursed along this vessel.

4. The posterior tibial artery was completely obliterated, being filled with a solid mass of completely organized clot apparently of months' standing. The anastomoses around the knee-joint had been so disturbed by the double amputation that an accurate dissection was impossible. The upper and lower sural arteries were found wide open.

CASE 2.—Man, white, aged 71. Diabetic gangrene of the right heel of six months' standing. The gangrenous process was extremely indolent and had remained stationary for at least two months. The patient suffered from great pain in the part. There was marked atheroma of all the peripheral arteries. The urine was loaded with sugar.

Operation.—Under spinal anesthesia (stovain), an amputation through the lower third of the thigh was made. The femoral artery at the point of section was blocked up with a firm organized clot of long standing. After the tourniquet was removed the flaps were completely dry. Not a single ligature was applied to any vessel except the femoral vein, which was wide open. In spite of this the flaps lived and united by first intention. Just a week after the amputation the patient passed into diabetic coma and died.

Dissection.—1. The femoral artery at the line of section was completely obliterated.

2. The popliteal, below the origin of the upper sural arteries, was small but quite patent. It was patent as low down as the bifurcation into the anterior and posterior tibials.

3. The posterior tibial was thrombosed and unable to transmit fluids. The thrombus was partially organized.

4. The anterior tibial had a patent lumen along which fluid could be forced easily. It was atheromatous.

CASE 3.—Man, white, aged 63. Diabetic gangrene of the right big toe and the contiguous parts of the sole of the foot. The gangrene was of the dry variety and practically stationary.

Operation.—Amputation through the lower third of the thigh under spinal anesthesia (stovain). The femoral at the point of division was almost obliterated. It contained no clot, but the walls were very much thickened and the lumen was very small. After the tourniquet was removed only a very thin trickle of blood escaped from it. The terminal branches of the profunda femoris bled freely.

Dissection.—1. The popliteal below the origin of the upper sural and upper internal articular arteries had a fair-sized lumen much larger than that of the femoral. This continued patent as low down as the bifurcation.

2. The posterior tibial was very atheromatous; its lumen was very small but fluids could be forced down it.

3. The anterior tibial was unusually large, very atheromatous and calcareous and the lumen was seriously narrowed.

RELATION OF FINDINGS TO THE CLINICAL SYMPTOMS

It is interesting to analyze the pathologic findings and to link them as far as possible with the clinical symptoms presented:

The actual appearance of the gangrenous onychia in Case 1 had been preceded for at least a year by attacks of local ischemia, shown by intense pain in the foot, cramps in the calf muscles and blanching of toes and foot. During this time it is probable that the circulation along the posterior tibial was becoming seriously embarrassed on account of the advancing arteritis. The actual onset of gangrene seemed to result from traumatism after removal of the nail. Even then the process was exasperatingly slow, four months elapsing before the whole toe became gangrenous. During this period blood was still reaching the foot and outer toes along the patent anterior tibial. The latter days of the affection were attended with threatening gangrene of the outer toes. This condition probably coincided with the obliteration of the popliteal artery by clot, which prevented any blood from reaching the lower extremity except that passing between the anterior tibial artery below and the anastomoses around the knee-joint above. The path of the blood around the obstructed femoral and popliteal vessels must have been by way of the terminal branches of the profunda femoris anastomosing with the upper sural and articular arteries, the latter with the lower sural and articular arteries, and these again with the anterior tibial recurrent branch. The path was so tortuous and the channels so narrow that a mere trickle of blood passed through, and as the case showed, gangrene was inevitable.

Gangrene affected the soft tissues of the heel and part of the os calcis in Case 2. The posterior tibial artery was completely blocked. The anterior tibial was patent.

In Case 3 the gangrene affected the big toe and a small contiguous part of the sole of the foot. Here the anterior tibial artery was unusually large although the lumen was narrowed. The posterior tibial was almost obliterated.

In either of these cases a high blood-pressure and a full current of blood from above through the femoral and popliteal would probably have been sufficient to force the blood along the patent vessels to the extremity. But in each case the current from above in the femoral was obstructed. The femoral artery was totally obliterated in Case 2 and blood was reaching the popliteal by way of the profunda femoris and the upper sural and articular vessels, thence passing into the patent anterior tibial. In Case 3, although a very small lumen was present in the femoral artery, the greater part of the blood passed into the popliteal and tibials by means of the same chain of anastomoses. It is evident that all blood reaching the tibials under such circumstances must carry so low a tension that the capillary circulation would be very sluggish, and sooner or later gangrene would be inevitable.

METHODS OF ASCERTAINING CONDITION OF ARTERIES

From the study of such cases the query naturally arises, Have we any means of finding out the exact pathologic state of either the anterior or posterior tibial arteries, as to the presence of atheroma and their respective capacities as carriers of blood? There are no absolutely accurate methods. Much must be a matter of surmise. The position of the gangrenous area, as of the heel pointing to obliteration of the posterior tibial artery in Case 2, or gangrene spreading along the plantar aspect of the foot while the dorsum is free, or vice versa, may be a valuable aid. Roentgenoscopy would enable us to picture the calcification of the arteries, but we often find the lumen of such arteries absolutely patent.

It is impossible to use pressure on either of these blood-vessels near enough to their origin to enable us to find out whether the circulation of the limb is carried on by one or the other or by both equally. Either vessel can be compressed just above the ankle and a certain degree of information obtained. It would be difficult, however, to apply accurate pressure above the upper malleolar branches, a necessary precaution if we wish to cut off all connection between the two vessels.

Can we find out whether the popliteal artery is patent? In Cases 2 and 3 the popliteal artery was patent

although the femoral artery, at the site of amputation, was practically obliterated.

As described earlier, by driving all blood from the limb and putting pressure on the femoral artery in Hunter's canal before the tourniquet is released from the upper part of the thigh, the competence of the collateral circulation can be determined beforehand. This method, however, is a test of the collateral circulation as a whole and gives us no idea of the competency of its various factors. Blood may reach the toes, without passing along the popliteal artery, by way of the profunda, the upper sural and articular branches, the lower sural and articular and the tibials; and in the cases of popliteal aneurysm this is the usual path. In cases of atheroma it is probable that the popliteal artery remains open for quite a long period to meet the exigencies of the occasions as in our Cases 2 and 3.

At the present time we can only make a shrewd guess at the exact pathologic state of the blood-vessels, and on this account the treatment of actual and impending gangrene of the lower extremity is unsatisfactory.

CONCLUSIONS

The question of amputation is a knotty one to decide, both as to time and as to location. The plan of waiting is satisfactory as a rule, provided one is prepared to deal radically with the case if it does not halt. I am firmly convinced that the empiric rule of the old surgeons is based on correct principles: "Avoid amputation if possible, but if it is inevitable amputate high, that is, through the lower third of the thigh."

When careful dissections of the arteries are made, marked atheromatous changes will be found invariably in one or both tibials and in the popliteal and femoral also. As it is impossible to be absolutely certain as to the patency of these vessels, the risk of amputating through tissues supplied by diseased arteries is too great to be encountered. We can assume as a probable certainty that one or both tibials is obliterated or seriously obstructed; consequently amputation of the leg is to be shunned. Although in many cases the popliteal artery is patent and forms the main channel by which blood is carried from the upper anastomotic channels to the tibials (the femoral often being blocked, as in Case 2), it is unsafe to trust the future of an amputation stump (say of a knee-joint disarticulation) to such a precarious blood-supply.

It is much safer to amputate through the lower third of the thigh where the flaps are well nourished. At this level, even in cases in which the main femoral trunk is obliterated, the flaps are usually well supplied with blood derived from the muscular trunks of the profunda femoris.

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ABSTRACT OF DISCUSSION

DR. CHARLES W. ALLEN, New Orleans: I have been interested particularly in the Matas hyperemia test and the Matas aluminum band, having worked them out with Dr. Matas.

DR. W. W. GRANT, Denver: It seems to me that two or three points are of very great importance in the discussion of this paper. First in importance is the point of amputation, or I should say, the degree of amputation that should be done. I recognize the fact that it is customary to amputate at as high a point as possible in case of gangrene of the foot or leg, if it is desirable to amputate at all. In cases of moist or wet gangrene due to infection, one should not wait for the line of demarcation. To amputate is the only thing to do in these cases. Ordinarily this is true of idiopathic gangrene but not of senile gangrene. I think that we ought to conserve as much of the limb as possible. The age of the patient and the etiology of the gangrene, whether it is due to infection or trauma, must always be considered in determining the question of amputation. I do not think that in cases of trauma of the foot, causing gangrene, we are justified in amputating above the knee. We ought to leave enough of the leg below the knee so that the patient will have a good stump for an artificial limb. That is a matter of great importance to laboring men. In fact, it is a matter of a good deal of importance at any time whether or not we should amputate above the knee in any case short of total death of the tissues due to infection of the leg below the knee. Ordinarily we can rely on the blood-vessels to produce in time a collateral circulation that will maintain the integrity of the remaining portion of the limb or a good part of it. In cases of hemorrhage or damaged blood-vessels, one should amputate in the absence of gangrene. In the acute infections with gangrene, one should also amputate.

DR. J. E. THOMPSON, Galveston, Tex.: My remarks were intended to apply to gangrene from disease, namely atheroma. I find it difficult to make up my mind when and where to amputate. I have known of three amputations done, one at the ankle, one below the knee and the third at the middle of the thigh. I shall hesitate still more and more about performing an amputation below the knee until I am absolutely certain about the condition of the vessels, which at present I am not.

MID-OPERATIVE DIAGNOSIS IN UROLOGIC OPERATIONS

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I desire to discuss a subject that is forcing itself on the mind of the operator in numerous instances in urologic operations. I mean the correcting, the amplifying, the definite establishing of the diagnosis after the exposure of the organ that is the object of the interference. The seeming paradox that these experiences become more numerous with our advancement in refined urologic diagnosis is easily apparent if one considers that with the progress of knowledge the possibilities and the advisability of surgical work in urology become increased.

That this mid-operative diagnosis is of great importance is evidenced by the fact that the operative procedure must often be readjusted to the conditions discovered. For elucidation I shall give some striking instances and name the cases in the caudo-occipital progression.

In external urethrotomy, in most instances, the indication for mere splitting of the stricturing tissue or for more or less extensive resection of the fibrous tissue cannot finally be decided until the urethra or what is left of it in this region is exposed to view and to immediate palpation. How important this ultimate decision is can be proved by the revision of the late results of insufficient operations of this kind.

In Hagner's epididymotomy, one of the most satisfactory urologic operations, location and extent of the depleting incisions cannot be decided on until the testicle and its appendages are fully exposed: in some cases the swiftness and completeness of the result will depend on the decision whether or not, after puncture of a testicular hydrocele, the tunica testis ought to be removed.

It is also obvious that in operations for tuberculous involvement of the epididymis the extent of the interference can be determined only after the whole organ has been made accessible to vision and palpatory examination.

In suprapubic prostatectomy quite often the macroscopic differential diagnosis between simple hypertrophy and cancer of the gland cannot be made until the bladder is opened. The eventual diagnosis of malignancy will influence the decision either to desist from a radical operation or to excise and not to enucleate, if an operation is at all feasible.

Only the opening of the bladder and the subsequent changes in the circulation will permit differentiation between hypertrophy of the prostate and an edema which in some cases closely resembles the former.

In extensive tumors of the bladder, especially in those that are near the base of the viscus or are involving the latter, the mid-operative diagnosis assumes a very pronounced dignity. It is quite often impossible to acquire by cystoscopy or by preoperative bimanual palpation satisfactory information about the basis of the tumor or tumors and of the extent of the involvement of the adjacent parts of the bladder-wall and of the appendages of the bladder. Prevention of inoculation of cancer-cells during an operation is one of the demands of modern surgery. That means that in the instance under discussion the bladder must not be opened for the purpose of extirpating a suspicious tumor if the operator is not in a position to offer reasonable guarantees against the dissemination of cancer-cells into the surrounding tissue. This position is weakened if the free part of the tumor be friable or if the adjacent portions of the bladder-wall be involved to such an extent that it becomes impossible to clamp off the basis of the tumor, including sufficient apparently healthy tissue, so that this whole section of the viscus may be isolated from the rest of the bladder and removed without contamination. In tumors near the base of the bladder or involving it, these items can be ascertained only after the bladder is exposed and shelled out of its surrounding structure, thus becoming accessible to immediate palpation.

Another item of grave importance is the decision whether even an extensive resection of the bladder carrying a tumor gives a fair chance of a permanent result, or whether a complete extirpation of the bladder seems to be the only rational form of procedure, or whether the case under consideration must be pronounced inoperable. In other words, every operation of an extensive tumor around or on the bladder-base has to be looked on as an explorative laparotomy; that is, before any of the above-mentioned questions can be answered it is necessary to expose the bladder and its connections. This is done by digging the bladder out of its surroundings without opening it. Palpation will then reveal the character of the free part of the tumor, the width of its base, the extent of the infiltration of the adjacent part of the bladder-wall, the condition of the appendages of the viscus and the presence of glands.

In kidney surgery the mid-operative diagnosis is apt to develop signal triumphs. Unusually free hemorrhage in the approximating incision will call attention to the presence of adhesions in the depth and at the same time characterize these adhesions as so dangerous as to demand the most careful attention in order to prevent hemorrhages that may interfere with the orderly progress of the operation or lead to dangerous postoperative hemorrhages. At the same time this phenomenon contains a warning that the causative inflammation very probably has involved the peritoneum, gluing it to the kidney; the operator will therefore use extreme caution not to break into the serosa. A pronounced edema of such adhesions will call attention to the inflammatory character of your surgical kidney, making it very probable that the contents of the organ, that is, depraved tissue or pus, are still of an acutely infectious character, calling for protection of the surrounding structures during and after the operation, or even forcing a decision in favor of nephrectomy. If after exposure of the renal hilum a periureteral edema should be discovered, an edema involving the fibrolipomatous tissue surrounding the ureter on its course down to the bladder, the surgeon will weigh the clinical significance of this symptom. Such an edema as a rule is of mechanical origin, indicating that the ureter is somewhere kinked and consequently has to be exposed until the seat and nature of this obstruction is discovered and the diseased condition properly attended to. It is obvious that whatever the necessary surgery on the kidney may have been, complete and lasting relief cannot be furnished until the free patulence of the ureter is reestablished.

Bimanual palpation of the exposed kidney will in certain cases furnish information which may be absolutely decisive as to the choice between nephrectomy and nephrotomy, this decision being rendered before the kidney is opened by a dorsal incision. If, for instance, the operator has to deal with a coli infection and the palpation reveals only one area of softening, especially if located in the neighborhood of the pelvis, then nephrotomy will be indicated. The presence of only one abscess cavity gives a good chance for a cure by drainage, which can be maintained for any length of time the surgeon sees fit; while a prolonged drainage of the polar parts of a kidney obviously offers great difficulties.

If, on the contrary, the palpation of an enlarged kidney, infected by colon bacilli, reveals the presence of numerous sclerosed spots and a number of softened, impressionable areas between them, the chances of a cure by incision and drainage are very slim and out of proportion to the danger incurred by inundating the field of operation with the infectious contents of the organ. Here an ectomy of the unopened kidney will force itself into the foreground of consideration. It is not necessary, of course, to emphasize that, if the palpation of an exposed infected kidney proves this organ to be transformed into a mushy or fluctuating sac, the unopened kidney should be removed.

Palpation and inspection of the exposed kidney is also of preeminent value in streptococcic infection of the kidney. While ureteral catheterization and the associated tests make it possible to determine the presence of streptococci and to gain information as to the site of the subsequent pathologic changes, this part of the clinical observation does not give any information as to the quality and extent of the pathologic changes, and it is just these two points that determine the choice between nephrotomy and nephrectomy in these cases.

The details of this proposition are as follows: If the infection did not produce any extensive and pronounced infiltration, then the palpation of the exposed kidney will demonstrate a somewhat enlarged but generally soft kidney, and in such cases nephrotomy and subsequent drainage will accomplish a speedy and permanent cure. Even a markedly palpable infiltration, noticeable to the eye, will be amenable to cure by incision and drainage if it happens to be located close to the renal pelvis, because such a location makes prolonged and sufficient drainage possible. But if the streptococcic invasion has produced an extensive and hard infiltration of the renal parenchyma—something like a ligneous phlegmon—then a cure can be expected only from a nephrectomy. It is also very doubtful whether even a smaller infiltration of pronounced hardness, if distant from the center of the

kidney, can be cured by incising it, because it is hardly possible to establish and maintain a thorough and lasting drainage at such a location.

In cases of renal concretions a combined palpation of the exposed kidney will be very useful. If after splitting open the renal pelvis one finger is introduced into it and the other hand is placed on the surface of the kidney, valuable information can be gained as to the sufficiency of the pyelotomy or as to the necessity of a parenchymal incision. At the same time this digitomanual palpation will enable the surgeon to explore the calices and locate concretions higher up in the parenchyma, thus leading to the fulfilment of the demand to remove as many stones as were shown in the x-ray picture. The necessary sounding of the ureter in stone cases is also most satisfactorily executed through the exposed kidney after it is opened either through nephrotomy or pelvotomy.

In perirenal suppurations the mid-operative diagnosis will also influence the further operative steps after once the perirenal abscess is exposed. Closed perirenal abscesses are as a rule the product of an infected perirenal hematoma, and in such cases it will be sufficient to liberally incise the abscess wall and to provide for ample drainage. Diffuse perirenal suppurations are usually due to an infection of the perirenal tissue from a "renal carbuncle"; it will be imperative, therefore, if such a diffuse suppuration is encountered, to explore carefully the surface of the connected kidney and look for such a superficial infected focus in the surface of the kidney and attend to it properly when located.

I do not claim to have enumerated all the instances in which this mid-operative diagnosis will show its importance in urologic work, but I have endeavored to give some very marked examples. At the same time, I am aware of the fact that the urologic operators perform this mental function all the time; but, if I may be permitted to say so, most of the time in a rather subconscious way. Hence, I am inclined to believe that if the attention of the men interested is called to this proposition, by pertinent publication, the more concentrated attention given to these points will result in furnishing the profession with additional information that will turn out to be valuable not only by furthering our knowledge but also by bettering our results.

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CUTANEOUS AFFECTIONS OF CHILDHOOD *

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The cutaneous affections of childhood, while only a part of the whole field of dermatology, and while of the same pathologic character as in adults, are still sufficiently different in their etiology, symptomatology and therapeutics to deserve a more individual consideration than they are given. Whatever notice is taken of them now in the dermatologic text-books is limited and widely scattered and for their connected study the reader might almost find more information in the treatises on pediatrics.

The subject is too large to be covered thoroughly and systematically in a short paper. For this reason only a few points appertaining directly to cutaneous affections of childhood will be taken up in a general way and promiscuously.

Skin diseases, especially of the acute type, occur proportionately more frequently in children than in adults. The reason for this is not far to seek. Local and general conditions combine to reduce the normal resistance of the skin and to increase its susceptibility to pathologic changes. Exposures to injurious external agencies of mechanical, chemical and microbic nature are more common at this age. Lack of proper hygiene influences the condition of the skin considerably. Keeping the skin clean and soft is the best prophylaxis against trouble, but unfortunately there are wrong conceptions about this matter even among intelligent people. Harmful extremes are seen right along. There is no need of speaking of the fact that quite a number of eruptions are directly due to dirt. This acts on the skin mechanically and chemically, producing dermatitis and eczema and, by harboring pus cocci, inducing secondary infections such as impetigo and furunculosis. On the other hand, the modern tendency to carry the use of water too far also does a great deal of mischief. Hebra, the Nestor of dermatology, used to say that he observed more skin troubles in people who were overactive bathers than in those who were too sparing with their ablutions. The too frequent washing of the skin removes the natural lubrication without giving the fat-producing glands a chance to accomplish their duties. The skin grows dry and irritable, especially when an inherited tendency in that direction is present, and easily becomes a prey to skin diseases. The matter of soaps is quite important in this connection. Inquiries about them will often clear up the obscure cause of some obstinate skin trouble. Only the purest and mildest soaps should be employed for the skin of children, which is very tender and sensitive. There is no call for admixtures of chemicals or drugs in them. If these are needed, they can be applied more properly and accurately in other ways. This question may seem too trifling for much attention, but its consideration is attributable to the fact that people who are not instructed in this direction accept the claims of "patent-medicine" firms about their soaps, the purity and composition of which are unknown quantities and the usefulness questionable. At times the infantile skin does not tolerate water and soap at all. Trying to remove the scales and crusts with still more scrubbing is responsible for a vicious circle resulting in severe and apparently incurable skin eruptions.

A great factor in the prevalence of skin diseases in older children is the public school. Childhood is the only age at which a great number of persons come into promiscuous and intimate contact during the greatest part of the time. It would be interesting and instructive to learn the percentage of skin diseases originating in the schoolroom. Disseminated here are syphilis, tuberculosis, scabies, trichophytosis, impetigo, the acute infectious exanthems and others. Is this not sufficient reason that wherever medical inspection of schools is obligatory — and this should be insisted on in every school — the examining physician should have more than a smattering knowledge of dermatology?

The instability of metabolism and elimination in childhood are frequently contributing factors toward cutaneous affections. Their direct connection with urticaria is well known. The association of indigestion of fat and sugar with acute inflammatory eczemas has recently been pointed out by Towle and Talbot. Whether we believe skin eruptions to be purely local or not, the regulation of gastro-intestinal functions is always an

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important item of our therapeutics. Most of the breast-fed infants affected with eczema suffer from some dietary mistake. No general rules can be laid down for its correction and each individual case needs its own study and consideration. The feeding may be insufficient, excessive or irregular. If insufficient, the fault may be that the mother's milk is lacking in the necessary percentage of proteins and fat. This is especially the case with anemic women, an increase of sugar being present often in the milk to the detriment of the other solid constituents. More often it will be found, however, that the mother's milk is too rich and that the child is fed too often. Even under normal conditions the fat is not absorbed entirely and the normal feces contain about 10 per cent. of it. In abnormal cases the percentage of undigested fat may rise to 75 per cent. Infants' food should also contain a sufficient amount of water to increase the secretion of pepsin and hydrochloric acid and to assist the digestion. This is frequently neglected in breast-feeding. Constipation and diarrhea can often be traced to faulty feeding and retard the recovery from skin diseases. If the necessity arises, weaning must be resorted to and every means should be taken to find an artificial food of the right proportions. It must be remembered that the appearance of the child is often deceiving and that even if it appears stout and of the right weight signs of anemia may be in evidence and an examination will show the blood below par. Irregular and too frequent feeding is another frequent cause of digestive disturbances and requires regulation of the intervals between feeding and an early elimination of night feeding.

The diet of older children also needs careful supervision. The mistake of allowing them to partake indiscriminately of whatever food is served to adults is commonly made. When it is considered how often they are fed on sausage, cheese, pickles, sweets and other indigestible food up to the limit, it seems remarkable that no more harm is done. The control over the eating is still more important when the children are affected with skin diseases, and at times a plain milk diet becomes imperative.

Disturbances of the nervous system have more to do with causing skin diseases than is generally appreciated. The connection of dentition and eczema is probably due to such a cause. Rest and sleep are essential for the cure of acute skin diseases in children. Too much handling and petting of the sick child makes it irritable and restless and interferes with the efficiency of the treatment. It is a common experience to see children recover in a hospital under the same treatment which, applied by the mother at home, has proved a failure.

Not all these details may seem pertinent to dermatology, but their consideration is at least as necessary as the local applications and, unless the dermatologist becomes familiar with them, it would be better for him to leave the care of these cases to the pediatrician.

The nomenclature of skin diseases of children is just as unsatisfactory as in adults. Such names as pemphigus neonatorum, lichen urticatus, hydroa, scrofuloderma, etc., do not convey any meaning as to the pathology, symptomatology or etiology, often presume a classification which is doubtful, and are of no practical value. Until the time comes when all controversies regarding the nature of the different skin diseases are settled and the pathologic conditions are of avail for names and classification, their consideration on some practical basis would seem advantageous. For the reason that prevention and cure often depend on the knowledge of the cause, Adamson groups the skin diseases of children according to the etiology. He divides them into (1) congenital affections, (2) affections due to physical causes, (3) affections due to local parasitic action, (4) affections due to toxemias and general microbic infections, (5) affections of nervous origin and (6) affections of unknown origin.

In addition to the etiology another feature might be utilized. Many skin affections of childhood appear at certain periods either exclusively or by predilection. The reasons for this are known in some cases, while in others no satisfactory explanation has been brought forward. For example, the fact that the *Microsporon adouini* attacks the hair of children only is stated in every textbook, but Croker only, to my knowledge, attempts to explain it. He thinks that the greater resistance of the hair of adults prevents the invasion and penetration of the fungus into the hairshaft, but confesses that so long as the hair of the adult is no barrier against the *Megalosporon ectothrix* the age alone cannot be held responsible. Neither do we know why such diseases as prurigo, urticaria pigmentosa, etc., should occur in children only. By combining the usual period of occurrence of the skin diseases with their etiology whenever known, however, a grouping may be made incorporating exclusive characteristics of this age.

Such a classification would cover in a general way four groups: (1) congenital affections, like nevi, ichthyosis, syphilis, etc.; (2) affections occurring during infancy and childhood only, such as pemphigus neonatorum, urticaria pigmentosa, lichen urticatus, prurigo, xeroderma pigmentosum (the etiology of most of these is unknown); (3) affections predominating during childhood, among which belong impetigo contagiosa, miliaria, intertrigo and the acute exanthematous eruptions, which are due to the higher susceptibility and the lower resistance of the skin of children which permits the injurious action of micro-organisms and irritants; (4) all other affections which occur likewise in adults and are due to the same agencies. This classification is offered as a suggestion only and serves its purpose if it causes other efforts in the same direction.

Another feature which distinguishes the cutaneous affections of children is their deviation in symptomatology from that of adults. The lesions differ both in degree and in type. They assume a more acute and inflammatory character. Certain lesions like the erythematous, vesicular, pustular and bullous predominate over the papular, squamous and infiltrated. Furthermore, what would be called atypical in adults is frequently characteristic in children. Lesions of scabies occur not only in the usual locations, as the hands, feet, wrists, etc., but also on the head and the face. The wheals of urticaria, usually blanched in adults at first, from the compression of the capillaries, are often red from the beginning to the end in children. Impetigo assumes a great variety of clinical aspects and may simulate eczema, pemphigus and other affections. The bullous syphiloderm is seen almost exclusively in infants. The reasons for these changes must be looked for in the higher vascular irritability and the lower vitality of the epithelium. To one who has not given a special study to the skin diseases of children a diagnosis may become extremely difficult at times. The rule observed in adults, to depend for the diagnosis on some characteristic primary lesion, does not always hold good in children. It will be necessary to consider not only the existing cutaneous manifestations and the general symptoms, but also

to study closely the developments and changes due to the peculiarities of childhood.

In regard to the therapeutics of cutaneous affections of childhood two general rules might be laid down:

The first is the correction of any causative or aggravating complication. This point has already been partly referred to. A few words may be added in regard to the internal administration of drugs. It is better to do too little in this direction than too much. There are only a very few drugs which have any direct action on the skin. Those used for adults, such as arsenic, mercury, iodids, etc., must be used with great caution, partly on account of their general effects, partly because the child's skin is much more liable to drug dermatitis, which might complicate or disguise the original trouble. The drugs usually needed are simple and indicated by the internal complications. An occasional purge with calomel or some other laxative, some iron tonic, and possibly a diuretic is usually all that is necessary. Antipyretics and opiates should be avoided as much as possible. The second general rule applies to the local management. It should be rather conservative than aggressive. The natural tendency of the skin is to recover to a normal condition if given a chance. Protection of the diseased skin is of the utmost importance. This means avoidance of irritations of whatever nature, exposure to air, water, heat or cold, scratching, the action of physiologic and pathologic secretions, from old and dried-up applications, etc. The number of the local applications which are necessary is limited. The tender skin of children does not tolerate and does not need any strong and stimulating action. The efficiency of the treatment does not depend so much on the knowledge of a great many different remedies as on the skill to recognize the indications and the proper method of application.

Brandeis Theater Building.

ABSTRACT OF DISCUSSION

DR. WILLIAM A. PUSEY, Chicago: Some time ago I had an experience in the dietetics of childhood which interested and amused me not a little. I had been to see a child with a very severe infantile eczema. Several pediatrists of national reputation had already been consulted, and everything that expert knowledge could suggest had been done to put the child on a scientific diet, even to the extent of procuring a flock of goats to furnish the milk. On my way home, after seeing this patient, I met a woman carrying her 9-months-old infant. They were evidently poor, but the child had a remarkably smooth skin, was the very picture of health and was busily engaged in sucking at a green onion. I could not but contrast the condition of the two infants and think of how little we knew about dietetic disturbances. I do not mention this to advise green onions for babies or to disparage efforts at proper feeding, but to indicate how important the personal equation is in these cases. Aside from this, I thoroughly agree that intestinal disturbances are the basis of most cases of infantile eczema, and that in the treatment of these cases, careful regulation of the diet is very essential.

DR. DAVID LIEBERTHAL, Chicago: To the cutaneous affections of childhood, which at times offer great difficulties, belongs infantile eczema. That this is caused directly by gastro-intestinal disturbances I do not believe. Seborrhea of the scalp, however, is of great importance, since it is a remnant of the vernix caseosa which if it does not disappear in due course, becomes the basis for the development of eczema. After this has been established, it will be aggravated and maintained by any alteration of the normal functions, especially those of the gastro-intestinal tract, which are frequently due to faulty feeding. Thus proper measures in this direction, as well as the correction of other abnormal conditions, will exert a beneficial influence on the course of the eczematous manifestations, although the latter will not disappear without local treatment. Many cases of infantile eczema would be prevented if the infant's scalp were regularly examined for seborrhea and the same properly treated. I believe that cases of infantile eczema could be managed with greater facility in a well-equipped hospital than in the home.

DR. BURNSIDE FOSTER, St. Paul: I do not know whether onions are good for infantile eczema or not, but I believe that a change in the diet is followed by good results, at least in some cases. This does not mean that a similar diet is indicated in all these cases; one infant may thrive on onions while another may be poisoned by the mere smell of them. We may see two or three children in the same family, fed on the same diet, and while one will be subject to eczema the others will be entirely well. The personal equation is a very important factor and we do not know much about it. According to my experience, however, I have found that a radical change in the diet of these patients will many times prove beneficial.

DR. EVERETT S. LAIN, Oklahoma, Okla.: Of all the stubborn and discouraging conditions I have had to treat, infantile eczema is the chief. I am inclined, however, to agree with Drs. Pusey and Foster in their remarks about the diet—at least, in a measure. I do not recall ever having seen a severe case of infantile eczema among the Indians. In fact, eczema is not at all common among them, as my statistics show. When we come to the subject of the regulation of the diet of these patients, I am inclined to say, "What is the use?" I have seen an Indian baby, covered with secretions, excretions and filth, which are allowed to remain on the skin until they are accidentally removed, feeding, perhaps, from a filthy breast or from a filthier bottle and surrounded with flies, and still many of these babies are apparently fat and healthy.

DR. M. L. RAVITCH, Louisville: The discussion thus far has shown how little we know about eczema in children. It also shows how little we know about the chemistry of the drugs we prescribe. I have long regarded overfeeding as an important factor in the etiology of infantile eczema. To my mind, increased irritability of the skin is due to the change in mineral metabolism, causing alteration of the chemism of the skin. Scientific observations coincide with empirical facts that nutrition and diet are important factors in treating infantile eczemas.

DR. K. A. ZURAWSKI, Chicago: I think one mistake we make in the treatment of these cases is that we do not discriminate, but treat all these children along similar lines. We treat the thin, wiry baby and the fat, flabby one, the robust brunette baby and the delicate blonde, all in the same way. We give them the same food; we administer the same remedies. We treat an Indian baby in the same way as we do a little Swede. We must generalize a little less and use more common, ordinary horse-sense; then we shall have better results. I have found that certain types of infantile eczema require more proteins while others require more carbohydrates, and if I treat my patients according to the indications, I find that they quickly get well.

DR. ALFRED SCHALEK, Omaha: The discussion was practically confined to infantile eczema, which was only a small part of my paper. I do not know anything more about the etiology of eczema than the rest of you, but the point I wish to emphasize is that any faulty gastro-intestinal function will aggravate the eczema and is apt to interfere with the beneficial effect of local treatment. It is important that the dermatologist should know something about the proper feeding of infants, as he is not always in a position to call on the various specialists for aid.

What Is Important and What Trivial in Research.—The man of research requires the power to see the mosquito on the monument and for the moment to forget the monument for the sake of the mosquito. It is so often the trivial thing which turns out to be important. It is of more concern to us to know the mosquito which holds the power of life and death than to contemplate the battle commemorated by the monument.—R. D. Carmichael in *Science*.

OCCLUSION OF THE POSTERIOR INFERIOR CEREBELLAR ARTERY

REPORT OF CASE *

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From a clinical and physiologic standpoint, lesions of a limited area, occurring at any level of the brain-stem, are of much interest. Any attempt to analyze the grouping of the afferent impulses in this region has always been attended with considerable difficulty. Impulses arising in the same peripheral system after reaching the first synaptic junction in the spinal cord are formed into groups by specific selection and by gradual filtration away into secondary tracts, and then traverse the cord, grouped according to their sensory qualities, in paths which are frequently isolated by disease.

All of those impulses underlying sensations of posture, passive movement and spatial discrimination, ascend in the ipsolateral dorsal tracts of the cord, grouped in such manner that lesions can not differentiate between the various components. All those impulses of a painful and thermal quality are grouped in the contralateral spinothalamic tracts and can be interrupted separately or *in toto* by very limited lesions. But lesions here make no distinction between pain of a deep or superficial quality. During the passage of these impulses from the cord through the brain-stem to the optic thalamus, the paths of passage are anatomically very closely associated.

Impulses underlying sensations of pain, heat and cold receive the regrouped secondary impulses of a like nature from the face and continue their course in paths apart from those conveying the other components, and can be interrupted without a disturbance of other paths, or any one or a combination of any two of these components of sensation may be interrupted in this area without the other one or two being disturbed, or epicritic pain may be grossly involved by the process, while the pressure algometer readings indicate only a partial loss of the deep pain sense over the corresponding areas. In the brain-stem the impulses underlying an appreciation of posture and passive movements take a separate course from that taken by those underlying spatial discrimination, and may be interrupted separately. Among the lesions occurring in the brain-stem, resulting in sensory disassociation is the limited degeneration secondary to occlusion of the posterior, inferior cerebellar artery.

To Drs. Henry Hun[1] and Ira Van Gieson belong the credit of reporting the first case of this condition in America. This case was reported in 1897. Since then Thomas[2] reported two cases in 1907, Spiller[3] two in 1908, Gordinier[4] three in 1911, and Courtney[5] one in 1912. Sixteen cases have been reported in Germany, two in France, and two in England, one by Wilson[6] in 1908, and one by Head[7] in 1911. The few cases reported would indicate that the condition is rare, and I believe that it is so as it is inconceivable that a lesion with such a definite and clearly defined symptom-complex should have been unrecognized, in many cases. The following case report indicates quite clearly the character of the symptomatology:

Patient.—J. S., man, aged 45, farmer by occupation, consulted me March 29, 1913, complaining of vertigo, numbness and inability to feel heat over right side, difficulty of using left arm and leg, tendency to rotate and fall to left and difficulty of swallowing. Family history had no bearing on present trouble. Patient had had usual diseases of childhood but no serious illness and no syphilis; drank to excess up to one year previously; had been married twenty years; has five children living, all healthy.

Present Illness—Patient felt quite well March 13, 1913; ate heartily of pork and kraut at evening meal. He went to sleep early and slept soundly. About 2 a. m. he was awakened with loud roaring sound in head. He felt intensely giddy and vomited; attempted to sit up in bed but was unable to do so; head fell to the left and vertigo was increased. He was fully conscious and observed his symptoms intelligently. His left arm and leg felt paralyzed and the right arm and leg appeared numb. He could not swallow and his voice was husky. He perspired profusely but left face did not perspire nor has it up to the present time. He had horizontal and rotary nystagmus and double vision. His pulse was 42. A physician was called and diagnosed ptomain poisoning. On the following morning patient was unable to stand because of vertigo, could use left arm and left leg with difficulty, had tinnitus and decreased sense of hearing in left ear, had no perception for heat over entire right side below face. He was confined to his bed for about a week but was then able to be up and walk with assistance.

Examination.—I found him to be a well-preserved man of healthy appearance, weight 180 pounds, height 5 feet, 11 inches. Thoracic and abdominal viscera manifested no evidences of disease. The radials were palpable and blood-pressure was 210. Station and gait were both unsteady with tendency to fall and rotate to left, not increased by closing eyes. Motor Functions: Movements of muscles of face good, but expression not so lively on right side of face as on left, left side soft palate paralyzed and uvula pointed to right, swallowed all kinds of food with considerable difficulty. Tongue was projected in median line. Left arm and leg were slightly ataxic but there was no decrease of power.

Eyes: The eyes showed bilateral rotary nystagmus downward and to the left; the left pupil was smaller than the right, both responded equally well to light and accommodation but the left did not dilate so readily nor so thoroughly to shade as did the right. The left palpebral fissure was narrower than the right and the left eye was very slightly retracted into the orbit. Fundi of both eyes appeared normal. The tendon and skin reflexes were active but showed no abnormalities. It was in the sensory field I found the chief and most characteristic disturbances. The vision was good and there was no diplopia at this time.

Smell, Taste and Hearing: Sense of smell and taste were not impaired. The sense of hearing was not quite so good in left ear as in the right and he complained of a sensation of buzzing in his left ear.

Spontaneous Sensation: He complained of numbness over the left side of the face, right arm, leg and trunk. His idea of the right arm, hand, leg and foot were not so good as of the left.

Touch: Light touch as tested with cotton wool and Von Frey's hairs was equally good on both sides but patient's appreciation of hair stimulation over the left cornea was not so good as over the right. Pressure touch as tested with the esthesiometer showed no differences between the two

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

1. Hun, Henry: New York Med. Jour., 1897, lxv, 513, 581 and 613.
2. Thomas: Cases of Thrombosis of the Posterior-Inferior Cerebellar Artery, Maryland Med. Jour., 1907, l, 204.
3. Spiller: Jour. Nerv. and Ment. Dis., 1908, xxxv, 365.
4. Gordinier: Occlusions of the Posterior-Inferior Cerebellar Artery; a Definite Symptom-Complex, Albany Med. Ann., 1911, xxxii, 565.
5. Courtney: Occlusion of the Posterior-Inferior Cerebellar Artery, Boston Med. and Surg. Jour., 1912, clxvi, 329.
6. Wilson, S. A. K.: A Case of Thrombosis of the Left Posterior-Inferior Cerebellar Artery. Proc. Roy. Med. and Chir. Soc., London, 1908-09, ii, 52.
7. Head: Sensory Disturbances from Cerebral Lesions, Brain, London, 1911, xxxiv, 117.

sides. He could appreciate the weight of two grams over both sides of face, trunk and extremities.

Localization: There were no differences between the two sides.

Roughness: A sense of roughness was perceived over right face and on both sides over trunk and extremities when the tooth of the Graham-Brown esthesiometer was projected 1 mm., but it was necessary to project it 3 mm. for a perception of roughness over left face. Over right face he could differentiate between a 00 and 0 sandpaper. Over left face it was necessary to use a 00 and 1½ in order that he might perceive a threshold difference.

Vibration: No difference between the two sides.

Compasses: Perception of two points equally good over two sides when applied simultaneously or successively.

Pain: The perception of superficial pain was much decreased over left face and right side below face. Patient had a sense of pain over right face and left side when the prick algesimeter was applied with a pressure of 2 gm., but there was no perception of pain when it was applied to the left face and right side with a pressure of 10 gm. The dragged point of a pin immediately appeared dull when the median line was crossed from right to left face and from left to right trunk. He could differentiate between the head and point of a pin when applied to left face, right trunk and extremities but point felt dull. Pressure-pain sense was considerably impaired over right trunk and extremities. The pressure algometer registered as follows, the readings being in kilograms of pressure: left deltoid, 5; right, 8; left forearm, 9; right, 12; left palm, 10; right, 14; left nipple, 8; right, 12; left tibia, 4; right, 8; left sole, 5; right, 10. There were no differences between the two sides of the face.

Temperature: The threshold difference for heat and cold was the same over both sides of the face, but the perception of temperature was not so keen over the left as the right. I was unable to establish a threshold difference over the right trunk and extremities. The patient stated that all temperatures over these areas gave a sensation of cold. His recognition of posture of right arm and leg were slightly diminished and measurements made with the Gordon Holmes apparatus demonstrated that his perception of passive movement was not so good for right arm and leg as for the left. He could perceive flexion and extension of left index with a movement of 2½ degrees but it was necessary to flex the right index 7½ degrees and extend it 9 degrees to evoke a sensation of movement. His appreciation of weight, size, shape, form, texture and consistence did not vary as between the two sides.

ANATOMY

The following anatomic structures are involved in this condition: The posterior-inferior cerebellar arteries are the longest branches of the vertebrals and have their origin from them opposite the lateral surfaces of the medulla oblongata near its middle portion or just about 2 cm. below their union to form the basilar. Each vessel passes outward and backward across the restiform body and between the pneumogastric and hypoglossal nerve roots; it then passes to the under surface of the cerebellum where it divides into two branches, an internal or inferior vermiform branch and an external or hemispheral branch.

The inferior vermiform branch passes backward between the vermiform process and cerebellar hemisphere, supplies the vermiform process and anastomoses with the vessel of the opposite side and the superior vermiform, a branch of the superior cerebellar artery. The hemispheral branch is distributed to the under surface of the cerebellum and anastomoses with the middle and superior cerebellar arteries.

As the inferior cerebellar artery winds around the medulla oblongata it gives off several terminal end arteries which supply the lateral field of the formatio reticularis and restiform body. The anterior and median areas of the medulla oblongata are supplied by branches of the anterior spinal arteries and the olivary bodies by the lateral branches from the vertebrals. Hence an occlusion confined to either one of the inferior cerebellar arteries would not injure the hypoglossal nuclei or other nuclei on the ventricular floor, the posterior longitudinal bundles, mesial fillet, anterior pyramids or olivary bodies. The cerebellum would be in no wise compromised because of the free anastomosis between this artery and its fellow of the opposite side, together with the superior and middle cerebellar arteries.

The area of softening in the lateral field of the medulla oblongata, as shown by the careful studies of Hun and Van Gieson, Spiller and Thomas, is sharply limited to the formatio reticularis grisea and restiform body and has a vertical extent from about the middle of the hypoglossal nucleus to the point at which the restiform body passes into the cerebellum. Its greatest anteroposterior extent is from the dorsal blade of the lower olive to the restiform body. The parts usually involved are the ventrolateral spinocerebellar tract of Gowers, the dorsolateral spinocerebellar tract of Flechsig, the vestibulospinal and descending trigeminal tracts, brain-stem extension of the spinothalamic tract, cerebello-olivary fibers, nucleus ambiguus, vasomotor and sympathetic fibers and other fibers which pass via the restiform body. The auditory nuclei and nerves are occasionally involved, while the facial and abducents are rarely implicated unless the thrombus extends into the vertebral.

SYMTOMATOLOGY

As stated above the symptomatology of occlusion of the posterior-inferior cerebellar artery is definite and clearly defined. Spiller formulated a symptom-complex from the cases which he studied. A comparison of the symptomatology as presented by the case as reported with his symptom-complex shows some differences. Following are the important symptoms as manifested:

1. Sudden onset without loss or disturbance of consciousness.

2. No paralysis or paresis of the muscles of the extremities or the muscles innervated by the fifth nerve (owing to the motor paths contained in the ventral pyramids being supplied by the vertebrals and anterior spinal arteries), while the nucleus and axones of the motor fifth are nourished by the basilar.

3. Diminution of the epicritic pain and thermal sense over side of face corresponding to lesion. An algesia with raising of the algometer readings and complete loss of sensation to heat and cold over contralateral half of body below lesion. Paresthesias in the area of disturbed objective sensation.

4. Tactile sensation, intact in all points, diminution of sensation of roughness over ipsolateral side of face.

5. Diminished recognition of posture and passive movement in contralateral arm and leg. All spatial discrimination was perfect.

6. Incoordination in limbs corresponding to side of lesion.

7. Slight cerebellar ataxia with tendency to fall toward side of lesion. This tendency was not increased by closing the eyes.

8. Nystagmus bilateral, more intense when eyes are directed toward side of lesion.

9. Ménière's symptom-complex; vertigo, revolving vertigo, auditory hallucinations, vomiting, deafness on side of lesion.

10. Paralysis of muscles of deglutition soft palate and larynx on side of lesion causing much difficulty of deglutition with loss of phonation.

11. Sympathetic disturbances on side of lesion, causing smallness of pupil, narrowing of the palpebral fissure, retraction of eyeball and loss of sweating in the face on same side. The reflexes were plus but of no special significance.

3001 The Paseo.

THE SOLUBILITY OF LEAD SALTS IN HUMAN GASTRIC JUICE, AND ITS BEARING ON THE HYGIENE OF THE LEAD INDUSTRIES *

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The following investigation was undertaken at the request of Dr. Alice Hamilton, special investigator of lead-poisoning for the federal Bureau of Labor, because of the availability in our laboratory of normal human gastric juice.

The relative importance of the skin, the lungs, and the digestive tract as avenues of the lead absorption in workers in the lead industries seems to be determined only to this extent that the skin is the least important. While lead may be absorbed through the intact skin under special conditions of prolonged application of lead compounds to the skin, it may be questioned whether under ordinary working conditions absorption through the skin contributes to industrial plumbism. There remains, then, to consider the lungs and the digestive tract. Meillère[1] seems to show that while poisoning may occur by absorption of lead from the lungs, this is not a channel of absorption of practical importance in the industries. Goadby,[2] on the other hand, concludes that absorption from the lungs is the prime factor in most forms of plumbism. Goadby subjected cats to breathing air charged with various kinds of lead dusts. Lead-poisoning resulted in every case. The only precaution taken against lead dust reaching the stomach was brushing as much of the lead dust as possible from the animals' fur at the end of every inhalation period. It is therefore certain that some of the lead dust was swallowed with the saliva and the mucus from the respiratory passages. But Goadby's experiments seem to show that when the same lead dusts are given by mouth a much greater quantity is required than in the case of inhalation, the ratio estimated being 100:1. Thus, one cat (No. 12) was fed 0.8 gm. dry white lead a day for eighteen months without producing any other symptoms than some loss of weight. Other cats fed similar quantities of white lead daily developed symptoms only when alcohol was administered at the same time. This extraordinary tolerance of cats to dry white lead by mouth cannot be accepted as normal, in view of the results of our own feeding tests with white lead to dogs and cats. Legge and Goadby[2] point out that, on the whole, cases of lead-poisoning are most frequent in the industries in which the lead dusts are not adequately controlled. This is unquestionably true, but it does not follow that this lead dust enters the body mainly, or at all, by the lungs.

The lead dust, like any other dust, settles all over the person exposed to it. It permeates his clothes, and settles on the skin, the hair, in the mouth and in the respiratory passages. In the mouth the dust acts as a stimulus to salivation, and in an animal like the cat, which does not expectorate, this increases the frequency of swallowing. Some men are in the habit of swallowing the mucus from the trachea—and even that from the nasal passages. It is, therefore, obvious that the chances for swallowing lead increases greatly with the presence of lead dust. At the same time some of the lead dust particles must reach the alveoli of the lungs, and may pass into the body without solution like particles of carbon. But most of the lead dust that penetrates down to the bronchioles and alveoli must, unless dissolved, become entangled in the film of mucus and eventually be passed out by way of the trachea. It is well known that after breathing coal dust or dense smoke for an hour a man may continue to discharge carbon-stained mucus from the trachea for more than twenty-four hours. It is obvious that only an insignificant fraction of the insoluble dust in the respired air is taken up by the alveolar cells, or by the leukocytes and retained by the lymph-nodes. The carbon particles in the lungs and lymph-nodes of an old coal-miner or a stoker probably amounts to less than a gram, while the quantity of carbon passed in and out of the lungs by way of the trachea must have reached many kilos.

Lead-poisoning occurs in industries in which no lead dusts are produced. And since lead dust in the respired air increases the chances of lead dust entering the stomach, it is clear that the digestive tract is in some cases the sole, and probably in all cases, the most important avenue of absorption of the lead in industrial lead-poisoning.

There is no evidence that the lead salts are absorbed from the digestive tract or act locally on the mucosa, except when in solution. The strongest solvent in the digestive tract for the lead salts is the hydrochloric acid of the gastric juice, and of less importance the lactic acid, and other organic acids produced in the course of hydrolysis of proteins and of fats and of bacterial activity. In view of the humane and economic importance of lead-poisoning in the industries, the literature on the action of the gastric juice on the different lead salts appears fragmentary. It was even assumed until recently that lead sulphate is practically insoluble in the stomach and intestines. This view led to the practice of giving sulphuric acid lemonade to lead workers as a prophylactic measure. Blum,[3] Goadby,[4] Schicksal[5] and Beck[6] have studied the solubility of various lead salts in dilute hydrochloric acid, in various artificial gastric digest mixtures, and in gastric juice. All agree that the lead sulphate is soluble in these mediums. One of Goadby's two experiments with human gastric juice (10 c.c. gastric juice plus 0.1 gm. of the lead salts, at 37 C. [98.6 F.], for one hour) appears to show that the lead sulphate is more soluble than is lead carbonate (white lead) or lead oxid (litharge). The second experiment showed practically the same solubility for the three salts. The work of Blum and Schicksal indicates that the presence of peptone in gastric digest mixtures increases slightly the solubility of the lead salts.

MATERIAL

Samples of paint dust of basic lead carbonate and basic lead sulphate, respectively, were sent us by Mr. A. M. Johnson, chief chemist of the Pullman Company. Mr. Johnson stated that the samples submitted were typical of the paint dust produced in the Pullman shops

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* From the Hull Physiological Laboratory of the University of Chicago.

1. Meillère: Le Sâturnisme, Paris, 1903.
2. Goadby: Jour. Hyg., Cambridge, 1909, ix, 122. Goadby and Goodbody, Lancet, London, 1909, ii, 988. Legge and Goadby, Lead-Poisoning and Lead Absorption, London, 1912.
3. Blum: Wien. med. Wchnschr., 1904, liv, 538; Deutsch. med. Wchnschr., 1912, xxxviii, 645.
4. Goadby: Jour. Hyg., Cambridge, 1909, ix, 122.
5. Schicksal: Die Bekämpfung der Bleigefahr in der Industrie, 1908.
6. Beck: Arb. a. d. k. Gesndhtsamte, 1910, xxxiv, 446.

by sandpapering painted metal. The dust samples contained, per gram, lead corresponding to the following quantities of lead sulphate: basic lead carbonate paint dust, 1.04, 1.04 and 1.06 gm., respectively, 1.05 gm. average of three samples; basic lead sulphate paint dust, 0.86, 0.87 and 0.82 gm., respectively, 0.85 gm. average of three samples.

Samples of sublimed white lead (basic lead sulphate) and of lead carbonate ("Old Dutch Process") were sent us by the Pilcher Lead Company, Joplin, Mo. These samples were not mixed with oil. On analysis they were found to yield per gram the following quantities of lead sulphate: lead carbonate, two samples, 1.12 gm. each; basic lead sulphate, two samples, 0.98 and 0.96 gm., respectively, 0.97 average.

Normal human gastric juice was obtained from a man 27 years old, with complete constriction of the esophagus and a gastric fistula of sixteen years' standing.[7] The juice was secreted while the man was chewing palatable food when hungry. Hence it was normal "appetite" or "psychic" juice, not mixed with saliva. The total acidity varied from 0.40 per cent. to 0.52 per cent.

I. THE RELATIVE SOLUBILITY OF LEAD CARBONATE AND LEAD SULPHATE (PAINT DUSTS AND PURE SALTS) IN GASTRIC JUICE

The results are given in Tables 1 to 4. The lead carbonate proved in every case to be much more soluble than the lead sulphate. The lead carbonate paint dust is nearly as soluble as the pure white lead, while the lead sulphate paint dust is less soluble than the pure basic lead sulphate. We are at a loss to account for Goadby's results showing greater solubility of the lead sulphate in gastric juice, except on the hypothesis of faulty methods. A greater solubility of lead sulphate than of lead carbonate in gastric juice seems a chemical impossibility. We note that Goadby records only two tests and the lead was determined after centrifuging the digestive mixture instead of in clear filtrate. It seems probable that varying quantities of the lead salts were present in suspension in addition to that which was present in actual solution.

Peptone in concentrations of 0.2 per cent. and of 1 per cent. does not have any marked influence on the solubility of the lead salts, but the influence of peptone, so far as it is in evidence, is in the direction of increasing the quantity of lead dissolved. The formation of lead peptone compounds might lead to the setting free of the chlorin ions in the lead chlorid, and thus to the formation of more lead chlorid from the carbonate and the sulphate. Our figures show that this is not an important factor in lead-poisoning from the digestive tract.

The solubility of the lead salts in pure gastric juice is practically the same as that in similar quantities of 0.5 per cent. hydrochloric acid. It is therefore clear that the hydrochloric acid of the gastric juice is the all-important solvent. Pepsin, rennin, and other organic constituents may combine with the lead salts when in solution, but if this is the case the reaction does not appreciably affect the quantity of lead salts held in solution.

We were especially interested in the action of milk on the solubility of the lead salts in human gastric juice and weak solutions of hydrochloric acid, in view of the fact that in some places lead workers are required to drink milk before starting work. And practical experience seems to show that milk or other food in the stomach minimizes the danger of lead-poisoning from the digestive tract. When milk and gastric juice are mixed in the proportion of one to one, lead salts added and the mixture incubated at body temperature for ten hours, not enough lead goes into solution to give a qualitative lead test. In two cases a positive qualitative test was obtained when the lead carbonate paint dust was used. The same results are obtained in mixtures of milk and 0.05 per cent. hydrochloric acid. But when the ratio of the gastric juice or hydrochloric acid to the milk is increased the lead salts are dissolved in proportion to the increase in the quantity of gastric juice or hydrochloric acid (Table 4).

The foregoing action of milk is probably due to the fixation of the hydrochloric acid by the milk proteins and the neutralization of the hydrochloric acid by the carbonate of the milk. Hence, when an excess of milk is added to the gastric juice there will be no hydrochloric acid to effect solution of the lead salts, while in the presence of an excess of gastric juice some free hydrochloric acid remains to act on the lead. We are inclined to the view that the formation of insoluble lead albuminates is a factor of minor importance in the above-mentioned action of milk.

These experiments *in vitro* do not reproduce some of the conditions that obtain in normal gastric digestion. The fixation of the hydrochloric acid by the proteins takes place in the stomach as well as in the test-tube, so that the presence of proteins retards the appearance of free hydrochloric acid in the contents of the stomach. But the work of Cannon and others renders it highly probable that relaxation of the pyloric sphincter and entrance of the gastric content into the duodenum is ordinarily preceded by the development of some free hydrochloric acid in the pyloric portion of the stomach. This hydrochloric acid will, of course, tend to dissolve any lead salts in the chyme until it is neutralized in the duodenum. Albuminous foodstuffs can therefore diminish the solution of lead salts in the stomach only to the extent that they fix the hydrochloric acid in the gastric juice.

The taking of milk is a more efficient prophylactic measure than the taking of an equal amount of other forms of proteins, because there is less appetite secretion of gastric juice with milk, and the fat in the milk depresses and retards the action of gastric secretagogues.

II. THE ACTION OF BILE ON THE LEAD SALTS

The ferments of the pancreatic juice and the intestinal juice have, of course, no action on the lead salts, except indirectly in case of lead albuminates and similar combinations, formed in the stomach by lead salts already in solution. The solution of lead salts in the intestines must therefore depend on the weak organic acids produced in the hydrolysis of the foods, or bacterial action, and on the alkalinity of the digestive juices poured into the intestine.

Normal pancreatic juice was not available to us, but a number of tests were made of the possible solution of the lead sulphate and the lead carbonate paint dust in dog-bile and ox-bile. When mixed in the following proportion, 25 c.c. bile plus 25 c.c. water plus 0.5 gm. of the lead salt, with or without peptone, at 38 C. (100.4 F.), for ten hours, not enough of lead went into solution to give a qualitative test for lead. This applies to both the carbonate and the sulphate paint dusts. The presence of peptone had no effect.

7 Carlson, A. J.: Am. Jour. Physiol., 1912, xxxi, 151.

III. THE RELATIVE TOXICITY OF BASIC LEAD SULPHATE AND BASIC LEAD CARBONATE (PAINT DUSTS AND PURE SALTS) WHEN FED TO DOGS AND CATS

Since it is not possible in experiments *in vitro*, even when normal gastric juice is available, to reproduce some of the essential conditions of gastric digestion, the final solution of the question of the relative toxicity of the different lead salts must be sought by feeding experiments. Goadby fed various lead salts to cats. Five cats received from 0.5 gm. to 0.8 gm. dry white lead (lead carbonate) per day for periods varying from one to eighteen months. According to Goadby this quantity of lead carbonate per day produced practically no symptoms unless alcohol was given at the same time. One must infer from Goadby's work that cats are unusually resistant to lead salts given by mouth. In an earlier work Leymann[8] showed, however, that even the slightly soluble lead sulphate produces toxic symptoms in eight or nine days when fed to cats in quantities of 0.2 gm. per day. Blum[9] concludes that the sulphate is less toxic than the other lead salts employed in the industries.

FEEDING EXPERIMENTS (SERIES I)

Dogs of nearly the same size and age were selected, and 4 gm. of the lead sulphate and the lead carbonate paint dusts respectively were fed to the dogs in ground meat, either in one feeding or in two feedings, eight hours apart. The results are summarized in Table 5.

The feces of Dogs A and B (Table 5) were collected for six days after giving the lead paint dust per mouth, and the quantity of lead determined, with the following result:

Dog B, fed 4 gm. basic lead carbonate, containing 4.16 gm. lead determined as sulphate. Lead recovered in the feces, 2.61 gm. or 62 per cent.

Dog A, fed 4 gm. basic lead sulphate, containing 3.28 gm. lead determined as sulphate. Lead recovered in feces, 3.10 gm. or 94 per cent.

The lead in the feces of Dogs C and D was not determined.

FEEDING EXPERIMENTS (SERIES II)

Eight dogs were selected for this test, and grouped in pairs of approximately the same body-weight. One of the dogs of each pair was fed the sulphate paint dust in meat, the other one given the carbonate paint dust in meat. The quantity of the lead paint dusts given each dog was fixed to equal 0.1 gm. lead sulphate per kilo body weight. The dogs fed the sulphate paint dust thus received a greater quantity of the dust, as this dust contained a lower percentage of lead than the carbonate paint dust.

The results are summarized in Table 6. The table shows that the dogs receiving the lead carbonate paint dust developed severe symptoms of acute lead poisoning within from twenty-four to forty-eight hours after the first feeding, while the dogs fed the sulphate paint dust showed very mild symptoms of lead intoxication only after three or four feedings, that is, after from seventy-two to ninety-six hours. Feeding experiments as tests of relative toxicity break down, of course, as soon as vomiting or lack of appetite appears, as one cannot control the quantity of lead salts eaten or retained. For that reason the experiment was discontinued as soon as there appeared symptoms of intoxication in the dogs receiving the least toxic lead salt, that is, the sulphate.

FEEDING EXPERIMENT (SERIES III)

The results of the feeding tests with the sulphate and the carbonate of lead to dogs do not agree with those of Goadby on cats. It does not seem likely that cats have so much greater tolerance than dogs to lead salts by mouth. Legge and Goadby claim, indeed, that cats are especially susceptible to lead-poisoning. Moreover, Leymann obtained symptoms in cats from feeding 0.2 gm. lead sulphate per day for eight to nine days. How are Leymann's results on cats and our results on dogs to be reconciled with Goadby failing to produce lead-poisoning in cats on feeding the more toxic lead carbonate in daily doses up to 0.8 gm. for two to eighteen months? It is difficult to understand where any material source of error might be concealed in the relatively simple process of mixing lead salts with the food and observing the animals.

Our own test series consisted of four healthy cats, which we may designate as A, B, C and D. The quantity of the lead salts mixed with the food each day was fixed to equal 0.1 gm. of lead sulphate per kilo body weight of cat. The amount of ground meat, fish or milk and bread with which the lead salts were mixed was less than each cat would ordinarily eat per day, so as to insure all of the lead salts reaching the stomach.

Cat A.—Fed 0.3 gm. lead carbonate per day. The first three days the cat did not touch the food, although a new lot was prepared each morning. On the fourth day the cat ate about four-fifths of the food. No symptoms were observed, but the cat did not touch the food for two days following. On the seventh to the eleventh day the cat ate about one-fourth of the food each day. No obvious symptoms of lead-poisoning.

Cat B.—Fed 0.37 gm. lead sulphate per day. Cat refused the food-lead mixture the first three days. The fourth day the cat ate all the food; on the sixth to the eighth day about one-third of the food. On the ninth day all the food was consumed, but on the two following days less than half of it was taken. No lead intoxication in evidence.

Cat C.—Fed 0.31 gm. basic lead carbonate paint dust per day. First day cat ate about three-fourths of the food-lead mixture; second day cat ate about half of the mixture. On the morning of the third day the cat had vomited a considerable mass of partly digested meat. The cat seemed depressed during the third to the eighth days and refused all food. During the ninth to the eleventh days the cat ate about one-fourth of the food each day. There were no further symptoms.

Cat D.—Fed 0.3 gm. basic lead sulphate paint dust per day. The cat did not touch the food-lead mixture during the first three days. On the remaining eight days of the feeding period the cat ate all the food on four days and on the other days about one-third of the food. No symptoms of lead-poisoning appeared at any time.

This eleven-day feeding period convinced us of one thing only, namely, that mixing the lead salts with the food is not a feasible method in the case of cats. Through taste or odor the addition of these small quantities of lead salts to the ground meat, fish or milk and bread renders the food mass so unpalatable that the cats will starve for days rather than eat, and one cannot be certain of the cat eating even a small portion of the food on any day.* In a test of the relative toxicity of the two salts it is, of course, essential that all of the salts given shall reach the stomach each day. The method of mixing the lead salts with the food was therefore abandoned. A second series of four cats was selected and 0.1 gm. of the lead salts per kilo body-weight was administered in gelatin capsules each morning before giving the customary food. The results are given in Table 7.

The cats varied in weight from 2.5 kg. to 3.5 kg. Hence 0.25 gm. constituted the smallest and 0.35 gm. the largest dose of lead salts given per day. Toxic symptoms were produced by all the salts, but the lead carbonate and the lead carbonate paint dust were distinctly more toxic than the basic lead sulphate and the lead sulphate paint dust. The toxic symptoms noted were vomiting, loss of appetite, constipation and depression. The feeding period was too short for the development of the chronic nervous symptoms.

It will thus be seen that cats and dogs show about the same susceptibility to lead intoxication by mouth. Lead carbonate and lead sulphate when given daily in quantities up to 0.1 gm. per kilo body weight produce toxic symptoms within two to eight days.

8. Leymann: Arch. f. Hyg., 1892, xvi, 316.
9. Blum: Deutsch. med. Wchnschr., 1912, xxxviii, 645.

IV. SUMMARY

1. *Solubility of White Leads in Human Gastric Juice*

WHITE LEAD PAINT DUSTS

Solubility in pure gastric juice (25 c.c. juice to 0.5 gm. lead):
Basic lead carbonate paint dust, 46%.
Basic lead sulphate paint dust, 5.7%.
Solubility in gastric juice + peptone (25 c.c. juice, 0.1 gm. peptone, 0.5 gm. lead):
Basic lead carbonate paint dust, 46%.
Basic lead sulphate paint dust, 7.3%.
Solubility in gastric juice + milk (juice 1 : milk 1):
Basic lead carbonate paint dust, none = 0%.
Basic lead sulphate paint dust, none = 0%.
Solubility in 0.5% HCl (25 c.c HCl to 0.5 gm. lead):
Basic lead carbonate paint dust, 66%.
Basic lead sulphate paint dust, 6.7%.
Solubility in 0.5% HCl + milk (HCl 1 : milk 1):
Basic lead carbonate paint dust, none = 0%.
Basic lead sulphate paint dust, none = 0%.
Solubility in 0.5% HCl + milk (HCl 2 : milk 1):
Basic lead carbonate paint dust, 25.4%.
Basic lead sulphate paint dust, 1.5%.
Solubility in 0.5% HCl + milk (HCl 4 : milk 1):
Basic lead carbonate paint dust, 83.5%.
Basic lead sulphate paint dust, 6.9%.

WHITE LEADS

Solubility in pure gastric juice (25 c.c. juice to 0.5 gm. lead):
Lead carbonate ("Old Dutch Process"), 53%.
Basic lead sulphate 25%.
Solubility in gastric juice + peptone (25 c.c. juice to 0.5 gm. lead):
Lead carbonate ("Old Dutch Process"), 57%.
Basic lead sulphate, 27%.
Solubility in pure gastric juice (50 c.c. juice to 0.5 gm. lead):
Lead carbonate ("Old Dutch Process"), 69%.
Basic lead sulphate, 30%.
Solubility in gastric juice + milk (juice 4 : milk 1):
Basic lead carbonate, 90.0%.
Basic lead sulphate, 34.8%.

2. *Toxicity of White Leads When Fed to Dogs and Cats*

The lead carbonate is much more toxic than the lead sulphate. But both salts produce acute lead poisoning when given in quantities of 0.1 gm. per kilo body-weight daily.

3. *The Influence of Milk*

When milk and gastric juice are mixed in the proportion of 1:1, the hydrochloric acid of the gastric juice is so completely fixed by the milk proteins or neutralized by the carbonates in the milk that the mixture has virtually no solvent action on the lead salts; but when gastric juice is present in excess the lead salts go into solution in proportion to the excess of the gastric juice. When milk is taken into the stomach there occurs, of course, a similar fixation of the hydrochloric acid, and, in addition, the total quantity of gastric juice is diminished owing to the inhibitory action of the fats in the milk on the processes of secretion.

4. *Practical Suggestions*

On the basis of our work we venture to offer these two practical suggestions:

1. The lead carbonate is so much more toxic than the lead sulphate that lead workers as well as the state should aim at the elimination of the use of the carbonate in all industries in which this is possible.

2. In addition to taking other important prophylactic measures the lead workers should drink a glass of milk between meals (say, 10 a. m. and 4 p. m.), in order to diminish the chances for any swallowed lead to be dissolved by the free hydrochloric acid of the gastric juice, as in some persons there is considerable secretion of gastric juice in the empty stomach.[10]

ABSTRACT OF DISCUSSION

Dr. E. D. Brown, Minneapolis: The old text-books give as the standard antidote for arsenic poisoning, which is probably the same for lead, the taking of milk, which helps to fix the acid in the gastric juice. This is undoubtedly in part the way of action. Recent investigators have shown, however, that the milk only delays the action of the arsenic and that eventually the arsenic will be absorbed and will exert its toxic effects.

Mr. M. I. Wilbert, Washington, D. C.: I should like to ask Dr. Carlson whether or not he has come across the empirical practice of administering olive-oil? I know that in one large manufacturing concern in Philadelphia it has been the practice to compel the employees to take olive-oil rather liberally. They furnish all the olive-oil that the employee will take, and it is asserted that since the establishment of the practice, there has been no lead-poisoning in that particular lead-works.

Dr. A. J. Carlson, Chicago: I have no experience in giving olive-oil. Olive-oil or any fat inhibits the secretion of gastric juice; but the importance of olive-oil is probably in keeping the bowel open and overcoming constipation which is one of the first troubles in lead-poisoning.

PHENOLSULPHONEPHTHALEIN IN ESTIMATING THE FUNCTIONAL ACTIVITY OF THE KIDNEYS

A FURTHER CONTRIBUTION TO ITS VALUE

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In a former paper Dr. Kristeller and I referred to a number of methods that have been devised for the purpose of estimating the sufficiency of the kidney function and have shown wherein they are unsatisfactory and impracticable. Up to that time we had made observations on fifty-eight subjects, giving seventy injections of phenolsulphonephthalein. These observations were made on healthy males and on a series of cases of chronic parenchymatous nephritis, acute diffuse nephritis, chronic interstitial nephritis and a few cases of enlarged prostate. The results obtained warranted the conclusion that the elimination of the drug went hand in hand with the elimination of the normal products of metabolism, a fact for which this method is bound to prove of greater value than any other devised.

We pointed out that phenolsulphonephthalein possesses the following advantages:

1. The drug does not readily decompose in solution and can be sterilized by boiling.

2. The dose required is small, 1 c.c. of the solution containing 0.006 gm. of the dye.

3. The injection is painless and is not followed by irritation if the solution is sufficiently alkaline.

4. The drug is excreted entirely by the kidneys.

5. The drug can be demonstrated in the urine in from three to ten minutes after the subcutaneous injection.

10. Hornborg: Skandin. Arch. f. Physiol., 1904, xv, 209. Carlson, A. J.: Am. Jour. Physiol., 1912, xxxi, 151.

6. From 50 to 70 per cent. is excreted during the first two hours.

7. The drug lends itself to accurate colorimetric measurement.

8. The quantity of the dye recovered in a specimen within a given time is not influenced by the volume of urine.

9. The presence of pus, phosphates, bile and indican does not interfere with the colorimetric estimation of this drug.

I am now prepared to state that the use of phenolsulphonephthalein, according to the methods devised by Rowntree and Geraghty, has convinced me that it is invaluable and I believe it to be the best of all the tests hitherto used for the purpose of estimating the functional activity of the kidneys in health and disease.

The method as originally described by Rowntree and Geraghty and as used by me is as follows: One cubic centimeter of the solution, containing 0.006 gm. of phenolsulphonephthalein, is injected intramuscularly. The solution should be previously sterilized by boiling and injected with a fine hypodermic needle.

The urine is collected in a vessel containing a few drops of sodium carbonate (Na_2CO_3) or sodium hydroxid (NaOH) solution. The patient is encouraged to void his urine every few minutes so that the time of the first appearance of the drug may be noted, which is easily discerned by the beautiful pink color which the urine assumes in contact with the alkali. The urine is then collected at the end of the first and second hours, consecutively. When the patient is unable to void his urine, in order to ascertain the first appearance of the dye, a catheter may be utilized, but fairly accurate results may be obtained by collecting the urine in one hour and ten minutes for the first specimen. This may obviate the necessity of repeated catheterization, as the introduction of a catheter for an hour is not without danger, and is very irksome to some patients. To ascertain the functional activity of the individual kidney, however, ureteral catheterization or the use of the segregator is required.

The average time for the first appearance of the dye in healthy adults is from three to ten minutes. The injection is painless and absolutely devoid of any untoward effects. Thus far I have failed to have a single infection in several hundred injections of the dye. Eight ounces of water should be given the patient about twenty minutes before the injection to insure free diuresis. The dye lends itself to accurate colorimetric estimation and for this purpose the Duboscq, the Helig or the Dunning apparatus may be used.

With the Duboscq apparatus, readings are made by the Vernier scale, and differences of 0.04 of a milligram can be detected. The Helig colorimeter is a modification of the Autenrieth-Koenigsberger hemoglobinometer. A standard alkaline solution (0.006 gm. of phenolsulphonephthalein to 1 liter) is placed in a wedge-shaped cell; the diluted urine is placed in a rectangular glass cup. The wedge-shaped cell is now manipulated by means of a screw, until the two sides of color-field are of the same intensity. The percentage is now read by the position of the indicator on the scale. I use this apparatus almost exclusively in my work and find it very simple and accurate. Dunning's apparatus consists of thirteen small bottles containing dilutions representing 100, 80, 60, 50, 45, 40, 35, 30, 25, 20, 15, 10 and 5 per cent. The readings are made by comparison. The simplicity and cheapness of this apparatus render it practicable but it is only relatively accurate and should be used only for rough estimates.

A filtered specimen is used for the determinations. The urine is diluted to 1000 c.c., two or three drops of sodium hydroxid (NaOH) are added and the solution is mixed thoroughly by pouring from one vessel to another. In normal adults from 50 to 60 per cent. of the phenolsulphonephthalein injected is recovered during the first hour.

Before relating my recent observations, it is of interest to recall the conclusions reached by Rowntree and Geraghty from their observations of the action of phenolsulphonephthalein in diseases of the kidneys and in various general diseases. They state that this drug is of immense value from a diagnostic and prognostic standpoint in nephritis, inasmuch as it reveals the degree of functional derangement, whether of the acute or chronic variety. In the cardiorenal cases the tests may prove of value in determining to what degree renal insufficiency is responsible for the clinical picture presented. The test not only has proved of value in diagnosing uremia from conditions simulating it, but has also successfully indicated that uremia was impending when no clinical evidence of its existence was present. The test has proved of great value in revealing the true renal condition in cases of urinary obstruction. It is here of more value than the urinary output of total solids, urea or total nitrogen, and enables the surgeon to select a time for operation when the kidneys are in their most favorable functional condition. The improvement in the renal condition in cases of urinary obstruction following the institution of preliminary drainage is strikingly indicated by this test. In unilateral and bilateral kidney disease the absolute amount, as well as the relative proportion of work done by each kidney, can be determined when the urines are obtained separately.

In the series of investigations with the phenolsulphonephthalein test which I am about to present, I have extended my observations so that they not only embrace the results of the test in normal and pathologic conditions of the kidneys, but also my observations in regard to the functional activities of the kidneys in a variety of general medical diseases, some of which have not hitherto been subjected to this test.

MEDICAL CASES*

LOBAR PNEUMONIA

The results seem to show that the activity of the kidneys was not appreciably altered by the disease. The average percentage recovered in two hours was 56. These cases presented severe symptoms. The activity of the kidneys, as shown by

TABLE 1.—LOBAR PNEUMONIA (5 TESTS)

Patient	Date	Gen. Cond.	First Appearance, Min.	Percentage Recovered			Remarks†
				1st Hr.	2d Hr.	Total	
M. S.	2/26/12	Good	5	36	13	49	Double Pneumonia.
	2/28/12	Good	4	66	18	84	
	2/29/12	Good	5	45	15	60	
I. B.	4/25/12	Good	..	55	trace	55	.....
H. C.	4/25/12	Good	..	20	15	35	Pulmonary edema and endocarditis.

† Chemical and microscopic examinations negative.

* The reaction in these cases was observed a few days after the crises. In this and the following tables, the amount of the drug given was 6 mg. in each case. The reaction was acid in all cases in this table.

chemical and microscopic analyses, was not impaired; these analyses were corroborated by the phenolsulphonephthalein test.

In the case of H. C. (Table 1) the diminished activity of the kidneys may be accounted for by the passive congestion in the presence of endocarditis and pulmonary edema; this is strikingly shown by the 35 per cent. output.

INFLUENZA

In influenza the output was found to be considerably diminished. The illness in these cases averaged two weeks.

TABLE 2.—CLINICAL INFLUENZA*

Patient	Date	General Condit.	Percentage Recovered		
			1 Hr. 10 Min.	2d. Hr.	Total
S. D.	12/26/12	Fair	22	10	32
L. T.	6/ 1/12	Good	32	14	46
I. Y.	5/ 8/12	Good	18	15	33

* The reaction was acid in each case. The chemical and microscopic examinations were negative. The cause of the diminished output in this disease will be made a matter of special study.

TYPHUS

In typhus fever, recently described as Brill's disease, according to most authors the involvement of the kidneys is rarely observed. Two of my cases, however, showed such involvement; one showed a severe acute nephritis with albumin, hyaline and granular casts; the others, a diminished output.

TABLE 3.—TYPHUS FEVER (BRILL'S DISEASE)*

Patient	Date	General Condit.	Percentage Recovered		
			1 Hr. 10 Min.	2d. Hr.	Total
M. K.	12/26/11	Good	8	10	18
I. K.	12/26/11	Good	6	10	16

* The reaction in both cases was acid. Chemical and microscopic examinations in case of L. K. showed albumin (trace), few hyaline and granular casts. The nephritis cleared up in thirteen days.

This is analogous with the results obtained in other forms of acute infectious disease, in which the urine was found to be negative on chemical and microscopic examination.

NEPHRITIS

In a series of cases of chronic nephritis, in which repeated tests showed a small percentage output, the prognosis was invariably fatal. Case 87 is a good illustration of this. There was interstitial nephritis, a faint trace of albumin, and occasional hyaline and granular casts; the patient died in uremic coma. Case 89 gave this history and likewise terminated fatally.

This was in contrast to Dr. Hess' case. The patient, B., a boy, aged 11, suffered with chronic hemorrhagic nephritis and the phenolsulphonephthalein output averaged 60 per cent. This boy steadily improved under treatment and was finally discharged from the hospital.

Patient I. F. (Case 46) had an acute nephritis with no definite etiology. He left the hospital forty-five days after admission, at which time the urine contained no albumin and no casts.

Patient I. G. (Case 54) also had an acute nephritis. (This case was also referred to under Typhus Fever.)

In patient J. G. (Case 1), after a period of rest and cardiac stimulation, the kidney activity was increased as the general condition of the patient improved.

TABLE 5.—DIABETES MELLITUS*

Patient and No.	Date	General Condition	Time of Appear., Minu.	Percent. Recov.			Chem. and Microscop. Exam.
				1st Hr.	2d Hr.	Total	
L. K., 5	2/28	Fair	10	22	23	45	0.8-2.8 per cent. glucose; no acetone or diacetic acid.
	2/29	Fair	5	30	12	42	Urea gr. v-oz. 1.
	3/24	Fair	12	15	8	23	Few hyaline casts.

* The reaction was acid in all cases.

Patient L. K. (Case 5), aged 26, had diabetes of one and a half years' standing, pruritus vulvae, furunculosis, edema of the lower extremities and moderate arteriosclerosis. The amount of glucose varied from 0.8 to 2.8 per cent. The patient became gradually worse and was finally discharged at her own

TABLE 4.—NEPHRITIS*

Patient and No.	Date	General Condition	Time Appear. Min.	Percentage Recovered			Chem. and Micros. Exam.	Remarks
				1st hr.	2d hr.	Total		
I. F., 46	12/20	Fair	..	10	20	30	Alb. trace. Many hyaline and granular casts.	.....
I. G., 54	12/26	Good	..	6	10	16	Alb. marked trace. Occasional hyaline cast.	.....
Y. B., 47	12/26	Good	..	10	10	20	Alb. trace, few hyaline and granular casts.	Chron. Interstitial nephritis
J. G., 1	2/26	Good	8	34	17	51	Alb. trace, few hyaline and granular casts.	.....
	2/28	Good	7	22	38	60	Albumin trace	.....
	2/29	Good	10	28	20	48	Alb. trace, few hyaline casts.	.....
J. G.	9/25	Fair	..	37	15	52	Alb. ++, many hyaline and granular casts.	Acute nephritis
J. G.		Fair	..	9	10	19	Same findings.	Edema feet and legs.
87	10/ 8	Marked anemia	..	Trace	20+	20+	Alb. trace, occasional hyaline and granular casts.	.....
	10/12	.....	..	12	12	24	.....	
	10/25	.....	..	Trace	15	15+	.....	
	10/26	Poor	..	Trace	14	14 +	.....	Died of uremic coma.
89	11/15	Poor	..	..	Trace	Trace	Alb. trace, occasional hyaline and granular casts.	Albuminuria retinitis. Died uremic coma.

* The reaction was acid in all cases.

request. The tests show a gradually diminished output of phenolsulphonephthalein.

ACUTE SYNOVITIS

In a series of cases of acute synovitis of various origins, the average output of phenolsulphonephthalein was within normal limits.

GENERAL SERIES

In a series of fifty cases admitted to the surgical and medical services, with no symptoms referable to the genito-urinary tract, the urines normal both chemically and microscopically, the average output of phenolsulphonephthalein was from 60 to 90 per cent. for two hours.

Patient A. B. (Case 36), Russian, exhibited gastric symptoms eight days after admission, consisting of loss of appetite and vomiting and also complained of pain in the epigastrium, increasing weakness and loss of weight. An exploratory operation to find means of relieving pyloric obstruction was not undertaken on account of negative phenolsulphonephthalein.

HYPERTROPHIED PROSTATE

As stated in my previous report on the results of the phenolsulphonephthalein test in hypertrophied prostate, in cases of mechanical obstruction to the genito-urinary tract, I have found the test invaluable in determining the most favorable time for operative interference.

The clinical condition of the patient and the chemical and microscopic examination of the urine do not always offer a proper index to the condition of the kidneys in this disease. (See Case 55.)

Patient A. K. (Case 11), aged 69, had shown an intermittent glycosuria for about three years when he was admitted to the hospital with an enlarged prostate and acute epididymitis, non-specific in origin. He had a residual urine of 6 ounces

TABLE 8.—GONORRHEAL PROSTATITIS*

Patient and No.	Date	General Condition	Percentage Recovered			Remarks
			1st Hr.	2d Hr.	Total	
D. E., 35	6/11/12	Good	56	0	56	Retention. Cath. inserted 1 hour.
	6/30/12	Good	30	20	50	Voided. No retention. Dysuria.

* Reaction acid throughout; chemical and microscopic examination negative.

TABLE 6.—GASTRIC CARCINOMA*

Patient and No.	Date	General Condition	Time Appear.	Percentage Recovered			Remarks
				1st Hour	2d Hour	Total	
A. B., 36	6/20/12	Poor	..	Trace	Trace	Trace	.....
	6/24/12	Poor	..	Trace	Trace	Trace	.....
E. A., 44	12/26/11	Poor	..	15	15	30	ed 2/3/12
H. M., 3	2/26/12	Fair	..	45	16	61	ed 4/22/12
	2/28/12	Fair	10	25	12	37	.....
	2/29/12	Fair	9	25	11	36	.....
L. K., 23	5/15/12	Fair	..	35	15	50	harged unimproved
L. L., 37	5/20/12	Good	..	36	0	36	Refused exploratory
	5/24/12	Good	..	22	12	34	.....

* The reaction in each case was acid, and chemical and microscopic examinations were negative.

SURGICAL CASES

TABLE 7.—HYPERTROPHIED PROSTATE

Patient and No.	Date	General Condition	Reaction	Percentage Recovered			Chem. and Micros. Examination	Remarks
				1st Hr.	2d Hr.	Total		
Z. R., 55	6/10/12	Fair	Acid	*	.....	27	Negative	Suspect. Chr. Int. Neph. was refused operation.
J. L., 58	6/29/12	Fair	.....	.....	.....	10	.....	.....
	7/ 1/12	Fair	.....	.....	.....	8	.....	.....
A. K., 11	4/12/12	Good	Acid	12	10	22	No alb. no casts. Few pus cells.	.....
	4/17/12	Better	Acid	32	20	52	Alb. trace	Refused operation, went home.
	6/17/12	Good	Acid	14	17	31	Few pus cells	.....
	6/19/12	Better	Acid	*	.....	37	.....	.....
	6/20/12	Better	Acid	*	.....	47	No alb., few pus cells.	Operated, disch. in 14 days.
M. B., 10	3/25/12	Good	Neut.	25	20	45	Alb. ++ no casts, few red and white blood cells.	.....
	3/28/12	Good	Acid	30	20	50	Alb. ++ few red and white blood cells.	Path. report, adenoma.
Mr. N., 49	11/29/11	.....	.....	10	38	48	.....	.....
B., 50	12/30/11	.....	.....	22 R. 12 L. 10	8 R. 8 L. 0	30	.....	Ureters catheterized.
S. L., 55	11/25/11	Poor	.....	12	10	22	.....	Was refused operation.
	11/27/11	Poor	.....	10	6	16	.....	
	11/28/11	Poor	.....	17	10	27	.....	

* Catheterized.

with a phenolsulphonephthalein output of 12 and 10 per cent. respectively, for the first and second hours. The patient was kept in bed for two weeks and with active diuresis and bladder irrigation the residual urine was reduced to less than 2 ounces, while the output of phenolsulphonephthalein was increased to 52 per cent. in two hours. He was discharged from the hospital and returned two months later with a residual urine which again averaged between 6 and 7 ounces; the phenolsulphonephthalein output was 31 per cent. Palliative treatment was instituted for three days and the phenolsulphonephthalein output increased to 47 per cent. Suprapubic cystotomy was then performed under cocain, quinin and urea hydrochlorid local anesthesia. Five days later the prostate was removed through the suprapubic opening under nitrous oxid anesthesia. The patient had an uninterrupted convalescence and was discharged in fourteen days. He was seen three and four months later when his general health had greatly improved and he emptied his bladder at normal intervals.

Patient Z. R. (Case 55) had enlarged prostate with complete retention of urine. Test was made but the phenolsulphonephthalein report was not waited for. The colorimetric estimation was reported at 27 per cent. A suprapubic opening was made into the bladder under local anesthesia, and drained as usual in a two-stage operation. The patient developed uremia from which he died. The prostate was not removed. There was no post-mortem. In view of the results of the phenolsulphonephthalein test, which led to the suspicion of chronic interstitial nephritis, the death from uremia is significant.

RENAL CARCINOMA

The following case with cerebral and meningeal manifestations emphasizes peculiarly the value of this test in establishing the diagnosis.

Patient T. K., a woman aged 54, was admitted to the medical service of the hospital in a stuporous condition, having manifestations of drowsiness, listlessness and apathy. The Wassermann reaction was negative; the cytology of the cerebrospinal fluid was also negative. Her symptoms were referable to cerebral and meningeal disease. The urine showed a slight trace of albumin, an occasional granular cast, and urea 10½ grains to the ounce (Doremus). The phenolsulphonephthalein examination showed only a trace in two hours. A rectal autopsy was performed. The kidneys showed almost complete destruction by carcinomatous infiltration and metastases were also found in the other viscera.

HYPERNEPHROMA OF KIDNEY

Patient J. K., aged 36 (Case 56), Russian, male, admitted on June 20, 1912, with a history of attacks of six weeks' standing; there was frequency of micturition and hematuria. On the day previous and the day of admission he began passing a considerable amount of blood in the urine and suffered cutting pain in the right flank, followed by vomiting and chilly sensations.

The patient was poorly developed and poorly nourished. He was a tailor by occupation. On physical examination, with the exception of a slight tenderness to deep pressure in the right lumbar region and an enlarged spleen, nothing could be elicited; the Roentgen ray was negative and the urine was negative and showed many red and white cells.

The results of the phenolsulphonephthalein examination were the following:

June 25 the ureters were catheterized; nothing was obtained from the left side; from the right ureter, 55 per cent. was recovered in two hours.

July 2, the ureters were catheterized again with similar results. Although the symptoms were referable to the right side, with the negative output of phenolsulphonephthalein on the left side, an exploration of the left kidney was determined on.

Operation was performed on July 3. The left kidney was exposed through a lumbar incision and was found to be very

TABLE 9.—RENAL AND URETERAL OBSTRUCTION (CALCULI)

Patient and No.	Date	General Condition	Reaction	Percentage Recovered			Chem. and Micros. Examination	Remarks
				1st Hr.	2d Hr.	Total		
L. K., 28	6/ 1/12	Fair	.....	25 Rt. ureter	10 Voided	35	See No. 28	Preoperative
	6/ 9/12	Poor	.....	25	15	40	.....	Postoperative
	6/18/12	Poor	.....	37	Trace	37+	.....	.....
	6/20/12	Improved	.....	34	10	44	.....	.....
	6/24/12	Improved	.....	22	21	43	.....	.....
	7/ 9/12	Fair	.....	34	11	45	.....	.....
I. R., 17	4/ 1/12	Poor	Neut.	10	12	22	Alb. +++. No casts.	Preoperative
	4/25/12	Poor	Acid	Trace	Trace	Trace	Many pus cells. Some R. B. C.	Postoperative. Large amount passed through wound.
	4/27/12	Improved	Acid	10	10	20	Same	
	5/ 6/12	Improved	Acid	Trace	15	15+	Alb. Few R. B. C.	Most excreted in 2d hour.
R. S., 27	6/ 3/11	Poor	Acid	.....	.....	48	See under case record.	Urine collected for 2 hrs. collectively.
	6/ 6/12	Poor	Acid	34	10	44	.....	Postoperative
	6/18/12	Poor	Acid	15	Trace	15+	.....	.....
	6/20/12	Poor	Acid	20	15	35	.....	.....
	6/24/12	Improved	Acid	28	16	44	.....	.....
	6/26/12	Improved	Acid	30	10	40	.....	.....
	6/28/12	Improved	Acid	37	Trace	37+	.....	.....
S. O., 30	6/ 5/12	Fair	Acid	15	15	30	Negative	Typical history. Never observed urine. While in hospital urine neg. Refused operation.
	6/ 7/12	Fair	Acid	43	8	51	Negative	.....
	6/26/12	Fair	Acid	25	12	37	Negative	.....
S. S., 37	6/ 6/12	Fair	Acid	18	7	25	Alb. tr. Many R. B. C. 1024.	Refused operation
R. R., 14	4/25/12	Good	Alk.	.....	.....	10	Alb. +++. Blood.	Postoperative
	4/27/12	Good	Alk.	10	32	42	.....	.....
	5/ 2/12	Good	Alk.	30	10	40	.....	.....

much enlarged. The kidney was firmly adherent to the diaphragm and spleen from which it was separated with great difficulty after resection of the twelfth rib. The pedicle of the kidney was very short and infiltrated. The pathologic report shows a hypernephroma with almost entire destruction of parenchyma and cortex.

RENAL CALCULUS

Patient L. K., No. 28, had a left renal calculus and pyonephrosis which was verified by x-ray and operated on. He had been operated on for a similar condition two years previously. The ureters were catheterized and 25 per cent. recovered from the right side for the first hour, while nothing was obtained from the left.

After the operation the output gradually improved. The function of the second kidney was restored as was demonstrated by the presence of the dye on the dressings.

This case is in some respects similar to the case of R. W.,[1] No. 1.

After the operation the patient ran a normal course for two weeks and then had an intermittent temperature; the urine at this time was negative. There was some rigidity over the upper abdomen.

An exploratory laparotomy was done on July 31. The remaining kidney on palpation was found to be somewhat enlarged, but otherwise negative. The wound was closed without drainage. Subsequently the patient ran a normal temperature and was discharged in good condition two weeks later.

The interesting feature of the preceding case was the fact that the subjective symptoms were entirely referable to the right kidney; the absence of phenolsulphonephthalein output, by repeated examinations, induced the surgeon to explore the left kidney.

The general series of diseases show good output, although all were hospital cases without apparent kidney involvement.

I have tried the intravenous injection of phenolsulphonephthalein and do not recommend it as a routine method.

DEDUCTIONS

In taking account of the information gained in these series of observations, the following points are particularly worthy of attention:

1. In clinical influenza the small output of phenolsulphonephthalein is out of line with the findings in other general diseases and a search for the reasons for this offer an opportunity for an interesting study, which we (the hospital staff and myself) hope to pursue in the near future.

2. The general series of diseases show a good output of phenolsulphonephthalein as a rule when there is clinically no evidence of kidney involvement.

3. The findings in regard to the value of this test, both from a diagnostic and prognostic standpoint, in nephritis confirm former conclusions in this respect and also the statement of Rowntree and Geraghty, that it reveals the degree of functional derangement, whether the nephritis be acute or chronic.

4. In several of my cases this test has revealed a degree of renal insufficiency, of which the clinical condition of the patient gave no evidence, but the existence of which has been confirmed by the fatal outcome of the case.

5. The test has served to demonstrate renal insufficiency in instances in which operation was contemplated and in which, though chemical and microscopic examinations were negative, subsequent developments confirmed the existence of the renal insufficiency.

6. In cases of ureteral or renal obstruction my findings are again in line with those of Rowntree and Geraghty in that I found a marked improvement, as indicated by the phenolsulphonephthalein test, following the removal of the obstruction.

7. In unilateral and bilateral disease of the kidney, the test has revealed the functional capacity of each kidney, and to such a satisfactory degree that, in some instances, it has assisted me to determine on the course of operative procedure. An absence or a very small output of the dye from one kidney with an increased output from the other side, indicates a seriously diseased kidney on the one side, with a compensatory hypertrophy of the other kidney.

I am indebted to Dr. S. Berkowitz, house physician of Beth Israel Hospital, for his valuable assistance in compiling these statistics.

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CARELESSNESS IN PHARMACY AS A REASON FOR A RESTRICTED MATERIA MEDICA *

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The federal Food and Drugs Act, June 30, 1906, and the several state laws of a similar nature that have become operative during recent years have served to stimulate the interest of federal and state officials in regard to the nature and composition of the medicines that are being dispensed in the drug-stores throughout the country. In connection with the compilation of material for the "Digest of Comments on the Pharmacopeia of the United States of America and the National Formulary," now being published by the Public Health Service of the United States, an effort is being made to reflect the published results of these several inquiries. For various reasons, largely because of the difficulties involved in making the necessary chemical examinations, the number or variety of drugs

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

and preparations reported on at all frequently is rather limited, but sufficient material is available to suggest some necessary changes in the making and handling of medicinal preparations if uniform and definite results are to be expected from their administration.

A century or more ago, the drug and medicine business, in its specialized commercial form, frequently constituted a part of the business of the dealer in paints, oils, glass and dyestuffs. Further specialization in the several branches of business suggested the economic possibilities in the manufacture of pharmaceutical chemicals and later of galenical preparations. The latter branch of manufacture now also includes the production of an almost countless number of specialties, semiproprietary and proprietary mixtures that have done so much to discredit the science as well as the art of medicine and for a time at least threatened to place physicians on a par with, or even below, the ideals of the makers of the so-called "patent" medicines that are warranted to cure all the ills that humanity is heir to.

On the practice of pharmacy, as such, this specialization in the way of making medicines has had a distinctly deteriorating influence. The pharmacist or druggist, from being thoroughly well conversant with the appearance and properities of the limited number of drugs handled by him, half a century or more ago, and the making of all of the then used preparations in his own laboratory, has in the course of time degenerated into a buyer and seller of ready-made preparations, the identity, composition or efficiency of which he is not in position to control. In order to eke out a bare existence he has been virtually compelled to add numerous so-called "side-lines," so that with comparatively few exceptions the modern drug-store represents a much more complicated business than did the paint, glass and dyestuff combination of a century or more ago.

While it is true that the present-day aggregation of odds and ends, commonly designated as a drug-store, has developed into a neighborhood necessity, it is also true that so far as making for progress in the science or the art of medicine is concerned there is little to be said in its favor. The number and variety of articles that are in stock in such a shop preclude even a superficial knowledge of their nature or composition, and this general want of knowledge has served to develop a lack of interest in the more important or official medicaments that threatens to undermine the reliance of physicians in practically all drugs and preparations.

As pointed out above, there is a considerable mass of data available to show that the drugs dispensed in many so-called pharmacies are not so reliable as they should be. The inferiority or unreliability of drugs and medicinal preparations as dispensed in some of the now existing retail drug-stores is due to a number of factors, not the least important of which are carelessness, ignorance and cupidity either singly or combined. That the first of these factors is undoubtedly the more frequent cause of variability is evidenced by the accompanying table showing the proportion of six comparatively simple pharmaceutical preparations that were found to vary from the officially prescribed standards, during the years 1907 to 1911, inclusive. These figures were compiled from the Hygienic Laboratory Bulletins entitled "Digest of Comments on the Pharmacopeia of the United States and on the National Formulary," for the several years, and represent only the published reports.

TABLE SHOWING NUMBER OF SAMPLES OF SIX SIMPLE PHARMACEUTICAL PREPARATIONS REPORTED ON BY STATE AND OTHER CHEMISTS DURING YEARS 1907 TO 1911, INCLUSIVE

	Number of Samples. Examined.	Rejected.	Approximate Percentage.
Lime-water	1,231	605	50
Solution of potassium arsenite.	317	221	70
Spirit of peppermint	809	518	60
Tincture of iodin	5,959	2,388	40
Tincture of opium	597	270	59
Tincture of nux vomica	279	83	30
Total number of samples..	9,192	4,085	45

Out of a total of more than nine thousand samples of six Pharmacopeial preparations reported on during five years, more than four thousand, or approximately 45 per cent., were found to be not in compliance with the requirements of the Pharmacopeia. In many if not all instances the degree or the nature of non-compliance indicated gross carelessness in the making of the preparation rather than malicious intent to adulterate. Thus tincture of iodin, the preparation that is most frequently examined, because of the ease with which the chemical investigation is made, has been found to be both above as well as below the strength required by the U. S. P. In a very large number of instances the objectionable shortcoming has been found to be due to the absence of the potassium iodid, now required by the Pharmacopeia, and in such cases inquiry usually elicits the fact that the retail druggist is still making his preparations by the formula official twenty years or more ago, his multitudinous duties in connection with his varied stock in trade having evidently prevented him from keeping in touch with the changes that have been made in Pharmacopeial requirements. Lime-water, another simple solution, is frequently found to be comparatively free from calcium hydroxid, owing to the all too prevalent practice of refilling the jar or bottle containing the lime with tap-water or even well-water, quite regardless of the deterioration of the lime owing to the presence of carbonates. The shortcomings found in connection with other preparations are usually due to like carelessness or thoughtlessness in connection with their making.

This variability of pharmaceutical preparations, due to carelessness in their making, is but one of the objectionable features of the present-day oversupply of drugs and medicines and the superabundance of stores in which they are sold. Another and perhaps an even more important factor is that owing to the great number and variety of preparations now on hand in the pharmacy many if not all are in stock for months and even for years. Kept under variable conditions, without care or adequate supervision, some preparations will deteriorate more rapidly than others and this naturally entails a degree of variability that must of necessity make for unsatisfactory results when the medicine is administered to a patient.

Reports on the deterioration of medicinal preparations are all too common and it is therefore not necessary to enumerate specific instances at this time. In general it is known that the conditions under which drugs, chemicals and galenical preparations are kept has much to do with their appearance, properties and efficiency. Up to the present time, however, we have too little positive knowledge of the changes involved in the deterioration of various substances, and much additional work and careful observation will be required to demonstrate clearly that the influences of air, moisture and sunlight on drugs and galenical preparations are many and varied, and that they may so alter a medi-

cine as to make an ordinarily active preparation practically inert, if not actually harmful.

Federal and state pure drug laws and the many laws designed to restrict and to regulate the practice of pharmacy are logically interpreted to mean that the licensed pharmacist is in a position to protect the purchaser by exercising a constant supervision over articles kept in stock and by selling only such drugs and preparations as will comply fully with the standards established for them.

The difficulties that are involved in this assumption become evident when we realize that the several books that have been recognized as standards for drugs and preparations include descriptions for more than five thousand articles and that, in addition, there are probably fifty thousand articles of a proprietary or semiproprietary nature that are not described in any of the recognized books of standards, but are on sale, and frequently in a poorly preserved condition, in the drugstores of this country.

The immense number of articles of a medicinal character carried in stock by the retail druggist, even if all of his time and the time of his employees were devoted to the study and care of these articles, would make it practically impossible to exercise the degree of supervision and care in testing that is theoretically required by the Pharmacopeia of the United States. Under present-day conditions practically no check is exercised in the pharmacy over drugs, chemicals or galenical preparations, and despite any care that may be exercised at the time of making, to adjust preparations to established standards considerable change may have taken place in the composition of these preparations before they finally reach the consumer.

The existing conditions and the possibilities may be summed up somewhat as follows:

The present-day drug-store with its numerous accommodations for the public has developed into a neighborhood necessity that can be continued with or without the strictly drug feature of the establishment.

In connection with a general collection of "side lines" it is impraticable for even the most careful and expert pharmacist to exercise any degree of supervision over the many drugs and preparations that must now be carried in stock.

In a shop devoid of "side lines" that is equipped with the necessary analytical apparatus it would be possible to exercise efficient control over a reasonable number of well-defined medicaments, and the physicians of the country, if they will but take an active interest in evolving a restricted or preferred materia medica list, can contribute much toward developing the sciences relating to pharmacy to such an extent that it may be a potent factor in the progress of the healing art and thus in turn a factor in promoting the welfare of the public at large.

Twenty-Fifth and E Streets N.W.

ABSTRACT OF DISCUSSION

DR. TORALD SOLLMANN, Cleveland: I imagine that the 50 per cent. of deficiencies perhaps does not reflect the actual condition of affairs. One must know how serious these differences were; then, again, where samples were taken. It is easy to standardize. It is simply a matter of enforcing the standardization. The faults are not due to dishonesty, but are due to carelessness. Why should not carefulness be enforced? We have state and federal laws for that purpose. The officials have mainly confined themselves to foods and patent medicines and have done fine work, and it should not be lessened one bit, but I think it is very much to the point to request them to add to their activities and interest the public in the official medicines as well as in the patent medicines and proprietary specialties. I very strongly support that idea.

DR. ALEXANDER S. VON MANSFELDE, Ashland, Neb.: We have a law that is very strong in intention in my state of Nebraska. We have a drug expert and food inspector, but out of the means at his command it is impossible to give sufficient money for such service. I want Mr. Wilbert to go on another tangent next year and describe some sort of a method by which we can have the examination of the drugs on the shelves of druggists done in a rather quick way, even if it is a little bit superficial, so that we can go to an average pharmacist and quickly examine the things in the drug store and throw out those that are abominable. Then we shall have made a good beginning for carrying out the law.

A CASE OF COCCIDIOIDAL GRANULOMA (CALIFORNIA DISEASE)

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History.—H. D. V., aged 24, American, clerk, Coalinga, San Joaquin Valley, California, was admitted to Southern Pacific Hospital Feb. 17, 1913. Family history was negative. Patient had had measles and typhoid (?) when a child. Denied venereal infection. He was in hospital from Aug. 16 to 20, 1912, for laryngitis, which was suspected of being tuberculous. The present illness apparently began two months before admission with "a cold," the laryngeal condition having subsided shortly after the previous discharge. Four days before readmission trifacial neuralgia together with severe frontal and occipital headache developed. Patient lost 20 pounds in weight in two weeks. No cough; no thoracic pains.

Examination.—Poorly nourished young man. Pulse rapid and weak; respirations normal; temperature 97.6 F. (a. m.). Pupils react well to light but poorly to accommodation. Tongue coated. Lungs and heart negative. Very slight abdominal tenderness. Spleen negative. No rose-spots. No tremors. Urinalysis: clear, amber, specific gravity 1.020; acid, no sugar nor albumin; no casts (on admission). Widal positive 1:40 and blood-culture negative.

Temperature and pulse were of typhoid character. Chief symptoms were severe, general headache and diarrhea. During the last week there developed an unproductive cough, mild nocturnal delirium and sweats.

Clinical diagnosis of typhoid was made. Death occurred March 2, 1913.

Post-Mortem Record.—Moderately emaciated body. No eruption, scars, bruises or bed-sores. Peritoneum smooth, glistening, pale and rather dry. Position of abdominal organs normal. Spleen moderately enlarged, but of normal shape; color slaty gray; consistency firm. Cut surface showed dark-brown pulp and many yellowish-white, firm and somewhat cheese-like areas from 3 to 5 mm. in diameter. Trabeculae indistinct. Liver of normal size and shape. Color of capsular and cut surfaces brownish-red. Consistency flabby. Numerous very small (1 mm.), yellowish-white, firm areas noted on capsular and cut surfaces. Gall-bladder apparently normal. Numerous petechial hemorrhages in gastric mucosa. Moderate congestion of ileum. No apparent involvement of Peyer's patches or solitary follicles. Appendix and pancreas apparently normal. Left kidney of normal size and shape; brownish-red and flabby. Moderate increase in cortical thickness. Yellowish-white, firm area of 1 mm. in medulla. Ureter apparently normal. Adrenal not examined. Right kidney identical with left. Adrenal showed yellowish-white, firm area of 1 mm. Bladder, prostate, testicles and epididymides not examined.

Left pleural sac apparently normal. Lung, 1,255 gm. Moderate congestion, especially at base. Both lobes closely

infiltrated with small, grayish-white, firm areas from 1 to 3 mm. in diameter. No evidence of pneumonia, or cavities. Right pleural sac showed old adhesions throughout. Right lung, 1,250 gm.; identical with left. Pericardial sac contained some excess of clear, yellow fluid. Serous surfaces apparently normal. Heart and aorta not opened. Mesenteric group apparently normal, except for one lymph-node, which was moderately enlarged, caseous and calcified. Brain and spinal cord not examined. (Permission for partial necropsy only was obtained.)

Histologic Examination.—Spleen: Except in a few places the follicular arrangement of the tissues was lost. General lymphoid hyperplasia present. There were many large, fairly well-circumscribed areas of lymphoid and polynuclear cells together with round, yeast-like bodies, many of which were endosporulating. In places marked congestion. There were a few necrotic areas. Trabeculae were indistinct.

Liver: Moderate, cloudy swelling present. Numerous small lymphocytic and polynuclear cell-collections noted, chiefly in the lobular tissues. Some of these contained the above-mentioned bodies. There was an area with a giant-cell which closely resembled a miliary tubercle.

Pancreas: Moderate congestion and a few areas of necrosis. There were a few small cellular masses similar to liver.

Kidneys: Cortical epithelium showed degeneration and desquamative changes—some cloudy swelling but chiefly fatty degeneration. There were several large and small cellular collections with and without yeast-like bodies similar to spleen and liver. There was an area with a giant-cell which closely resembled a miliary tubercle.

Adrenal: A few of the larger medullary arteries contained thrombi. A few small, cortical, cellular collections with bodies.

Mesenteric Lymph-Node: Capsule fibrotic and hyalinized. Lymphoid tissues almost completely necrotic and in places calcified. There were no giant-cells or other cellular evidences of tuberculosis.

Lungs: Moderate fibrosis of pleura. Moderate emphysema. Many large areas contained cells and bodies similar to spleen.

Pathologic Diagnosis.—Coccidioidal granuloma with lesions in the spleen, liver, pancreas, kidneys, adrenal and lungs; congestion of the spleen; cloudy swelling of the liver; congestion and post-mortem necrosis of pancreas; chronic parenchymatous nephritis; chronic pleuritis and pulmonary emphysema; tuberculosis (?) of mesenteric lymph-node.

REMARKS

The patient had lived in the San Joaquin Valley and had presented no skin-lesions to account for his infection. Although tuberculin reactions were negative, he was strongly suspected of being tuberculous when he was first admitted to the hospital in August, 1912. Marked hoarseness was present. Wassermann reaction was negative. On readmission in February he was apparently suffering with typhoid. In the light of the pathologic findings it seems not improbable that the positive Widal reaction was the consequence of a typhoid infection in early life. Although there was no splenic enlargement and blood-cultures were negative, the clinical picture was one of typhoid. At necropsy the lesions appeared to be those of miliary tuberculosis, the largest lesions being present in the spleen, if we accept the tuberculous character of the mesenteric node. For their size, however, the splenic lesions appeared rather firm for tuberculosis. Microscopically, there was no difficulty in demonstrating the *Oidium coccidioides* (Ophüls) in the various organs. These were most numerous in the spleen. It was unfortunate that a complete necropsy was not performed, especially to determine, if possible, the character of the early laryngeal lesion.

Southern Pacific Hospital.

LUMINAL, ITS TOXIC EFFECTS

WITH THE REPORT OF TWO CASES

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PROVIDENCE, R. I.

There has recently been introduced into this country a new sedative and hypnotic called "Luminal," which is chemically phenyl-ethyl-barbutyric acid. The need for new hypnotics is readily recognized, and the eagerness with which they are taken up in practice needs no comment especially to the neurologist and the psychiatrist. The features about this new hypnotic are that the sodium salt is readily soluble in cold water and that 0.3 gm. has approximately the same action as 0.5 gm. of veronal.

This brief communication is for the report of two cases in which Luminal was given as a sedative to produce sleep, and which produced in both, distinct toxic and untoward symptoms, lasting from twelve to thirty-six hours.

CASE 1.—A young woman, aged 24 years, single, has suffered from hysteria for at least five years, at times suggesting a psychosis. She is always wide awake; never retires until 2 or 3 a. m.; she will lie awake for an hour or more and finally fall asleep for several hours. This has occurred over and over again for several years. On April 1, the patient was given 0.3 gm. of Luminal, not to be repeated for forty-eight hours. The dose was taken at 9:30 p. m.; sleep was not produced and the usual run of events followed that evening. The next night, not having slept sufficiently the night before, she again took 0.3 gm. Within an hour she was asleep and slept very soundly until awakened by a member of the household at 10 a. m. At this time she presented evidences of drug toxemia. She was dreamy and sleepy; head felt very "light." Her speech was slurring and scanning; her words were mispronounced and there was paraphasia. On attempting to walk she swayed; there was considerable ataxia and inability to stand without support. She continued in this condition for twelve hours, when the symptoms subsided and left her in her normal state. During the active stage, her pupils were dilated and her knee-jerks very much diminished. There was no disturbance in sensation.

CASE 2.—Man, aged 35, single, has been suffering from insomnia, a symptom of a pronounced psychasthenic reaction. Manifestations of his condition have been present for about fifteen years, but within the last year his insomnia has grown more troublesome and he rarely obtains any more than three hours sleep a night. Various hypnotics, sedatives, placebos, hypnotic suggestion and psychotherapy have been employed without material result.

Having had several "bad nights" following a period of strain and stress in business, he pleaded for sleep. He was given 0.6 gm. of Luminal at 10 p. m. and told to repeat in one hour with 0.3 gm. At 2 a. m. he was still wide awake. At that time he asked if he could take more, but in its stead 0.2 gm. of veronal was given him. He went to sleep about 4 a. m. but had to be awakened at 10 o'clock. At that time he was very sleepy; his speech was unrecognizable, he mispronounced words, stumbled in his speech and evinced paraphasia. On walking, there was marked ataxia, with a tendency to drop-foot; he was unsteady in his gait; had a tendency to fall; there were accompanying gastro-intestinal symptoms. His knee-jerks were absent. His pupils were dilated. There were no sensory disturbances.

This condition continued with very long periods of sleep for forty-eight hours, when he gradually returned to normal.

It would seem that the use of this new drug as a hypnotic, even in pronounced cases of insomnia, is going to lead to some difficulty, if repeated doses of the drug are given. In both cases it is seen that the action of the drug did not make itself manifest until an accumulative

reaction had set in which then produced the untoward symptoms indicating drug toxemia.

[COMMENT: The description of Luminal and Luminal-Sodium appears in THE JOURNAL, May 17, 1913, p. 1541. It will be noted that the manufacturers state that the maximum dose, which should not be exceeded, is 0.8 gm. or 12 grains. In the first case the amount taken was only 6 gm. altogether. In the second case the maximum dose was exceeded. These cases illustrate the need of caution in the use of new remedies.—ED.]

260 Benefit Street.

THE TREATMENT OF ANGINAL PAINS*

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ST. PAUL, MINN.

Pain of cardiac origin varies greatly in the mode, intensity and even the areas of its symptomatic expression, but permits no hard and fast divisions. Pseudo-angina is by its very name an absurdity unless we assume pure hysteria or simulation; nor can we longer seek shelter under the "reflex angina" of Huchard or the angina vasomotoria of Nothnagel. The severest attacks of cardiac pain may occur in the absence of coronary sclerosis and with a falling arterial tension, and on the other hand we may, and often do, encounter cases of extreme sclerosis in persons who have never experienced severe angina. Indeed, it may truly be said that major angina pectoris is one of the rarer expressions of coronary sclerosis as this is ordinarily observed at necropsy.

Cardiac pain of the most severe type may be encountered in many conditions, and its minor forms differ only in intensity and in syndromic completeness from those of the major type, and are often indeed true miniatures of the so-called angina pectoris vera. That in all instances the coronary circulation plays some part is undoubtedly true, for we know that even in simple dilatation the coronary flow is impeded.

As regards the misleading modes of expression and areas of distribution of cardiac pain, we may seek an explanation in the work of Head, Sherrington and MacKenzie.

In 1896 Henry Head published a series of observations dealing with referred pain of cardiac origin. He showed the remarkable cutaneous distribution of such pain in various lesions and the associated hyperesthesia accompanying it and often persisting for longer or shorter periods. His work, though not yet generally recognized by the busy practitioner, throws a new light on certain pains of the thorax, back, upper chest, head and upper abdomen, and has taught us to study the subjective side of the symptomatology of cardiac disease, to avoid faulty and damaging diagnoses, and greatly improve the patient's chances of longevity. The pain of rheumatism, intercostal neuralgia, headache, gall-stones and gastric ulcer are so closely simulated by that of cardiac origin as to have frequently deceived the very elect of our surgeons, and the medical treatment of cardiac lesions has in the past been deplorably hesitant and dilatory.

Following Head's teaching, MacKenzie, writing in 1908, laid special and proper stress on the subjective manifestations of cardiac disease and stated fully his theory of reflex protective pain phenomena. MacKenzie furthermore reported on a group of cases rich in cardiac symptoms and representing a condition to which he could give no better name than that of the "X disease" which, one finds, corresponds to the condition described fully by Stiller in 1907 under the title of *die asthenische Krankheit* or "asthenia universalis congenita." MacKenzie describes these individuals as "masquerading as cases of heart disease" though crediting them with an occasional slight dilatation and the possession of mitral and tricuspid murmurs often evanescent.

Several years ago I became convinced that these individuals were not masqueraders, but rather actual carriers of hearts which in weakness of musculature, ready dilatability and imperfect resistance to and recovery from heart fatigue and overstrain rendered them a most interesting group for study. Indeed, it was soon apparent that the recognition and proper interpretation of this condition removed any necessity for retaining such terms as "pseudo," "reflex" or "vasomotor" angina, for these cases of cardiovascular instability, readily induced insufficiency, and exaggerated nervous response, proved genuine examples of the readiness with which, in the presence of a weakened heart, referred cardiac pain or other reflex protective phenomena might be evoked and also exemplified its every grade.

As I have pointed out in earlier papers, the factor which has apparently acted to obscure the part played by the weak dilated heart in the production of head, chest and upper abdominal symptoms in these slenderly muscled, loose-belted, soft-bellied, ptotic individuals is the remarkably small, low-lying heart which for them represents a normal. Such persons often show, even in the stages of actual impairment of compensation and in the presence of a struggling heart, a percussion area no larger than that which represents the normal of the non-asthenic individual. Rest, digitalis and other appropriate remedies, careful percussion comparisons, and especially the use of the Roentgen ray will promptly disclose the actual condition by revealing the amount of shrinkage which follows such measures. But the change in the percussion outline is no less striking than the prompt relief of the hitherto existent pain and discomfort, usually precordial but often in areas remote from the heart itself. Murmurs are often present, sometimes persistent, but often as transient phenomena, and these are usually of the systolic pulmonary and mitral type, though direct bruits in the aortic area are far from uncommon.

These asthenic patients do not often die of actual heart-failure or disease, nor are they prone to develop degenerative changes in the heart or blood-vessels, but they certainly furnish typical examples of the anginas of the milder type associated with the lesser degrees of insufficiency.

As the result of my study of these cases, I firmly believe that the chief factor in the production of all cardiac pain unassociated with active pericarditis or aneurysmal pressure, whether it be intense or mild, transitory or persistent, is to be found in the strain imposed on a weakened and laboring heart often combined with a certain degree of individual hypersensibility and heightened reflex reaction.

We cannot effectively meet the problems of cardiac therapy until we abandon the prevalent disregard of early insufficiency, and substitute intelligent and judicious oversight and appropriate and timely intervention for prevalent timorous neglect.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

Conservation of cardiac reserve means relative freedom from suffering and a longer life for the victim of cardiac disease, and our present methods as relating to early diagnosis and timely treatment are discreditable to our profession.

Having so extended the field of my essay, it would be impossible for me to enter into the details of treatment. Indeed, it would be presumption on my part to undertake a critical discussion of drugs before a body so much better fitted than I to deal with this side of the question.

The actual treatment of pain of cardiac origin is greatly simplified if we consider it as representing in all its phases impaired tonicity and contractility induced by cardiac fatigue. The cardiac reserve is, of course, the determining factor with relation to the onset of pain, and this reserve may be markedly diminished, through the gradual encroachments of degenerative processes on the myocardium with or without valvular disease, through sustained high arterial tension and the various toxemias acute and chronic, through constitutional weakness and insufficiency of the heart muscle, or suddenly by excessive and imperative demands which the heart cannot sustain.

We should remember, I think, that even the most intense types of heart-pain are in no wise different from the pain of gall-stones, renal colic, or even that experienced in the muscles of the legs when these are exercised excessively and over long periods.

We must not, therefore, assume that pain of the sudden spasmodic type means necessarily a condition of arterial spasm, though we may very properly assume that this is present in some instances.

As to blood-pressure, one cannot differentiate by means of the general syndrome between attacks of angina pectoris with increasing arterial tension and those in which the tension is actually falling at the time of the attack. An extreme rise in tension is certainly more often present in cases of interstitial nephritis with sclerosis and antecedent high blood-pressure.

It is unnecessary to detail the various therapeutic measures indicated in the treatment of cardiac pain, but two factors are basic, namely:

1. The relief of the patient's anxiety and mental perturbation.

2. Rest for the heart; indeed, the latter not only demands physical rest but also includes the first therapeutic need—mental rest as well.

For my own part I consider the use of morphin with atropin the primary and cardinal necessity in the treatment of the severer anginal pains.

While we cannot affirm any direct cardiac stimulation from the former drug, we certainly obtain that effect indirectly by the relief of pain and the sense of well-being which it induces in the patient.

Strychnin I have found of the greatest value in cases showing low or moderate tension, and I have not hesitated to use it in any instance in which the prostration was extreme despite the apparent theoretical objection.

With regard to the use of the nitrites, I confess that I cannot see of what value they can be in severe prolonged seizures or in any but the briefest attacks. Momentary relief is certainly afforded by amyl nitrite in some but not in all cases, although it has been shown that the vascular relaxation induced does not affect the coronary arteries, which become in fact somewhat contracted. It would appear that it at once momentarily stimulates the heart and frees the peripheral circulation

Nitroglycerin and erythrol tetranitrate are apparently valuable in some cases of high arterial tension as a means of retarding the seizures, though I have not been able to satisfy myself clinically that they possess the advantages so generally attributed to them, the former being much too transitory in its action.

Hot alcoholic drinks, especially brandy in the form of a hot drink, is, I believe, always permissible and usually gives decided relief.

The various preparations of digitalis may be used following the attack in all cases in which there is evidence of dilatation, though I believe that these should be most carefully handled in the instances in which decided arteriosclerosis is evident, or when a degenerative heart-muscle fails to yield a prompt response and we have reason to believe that the coronary arteries are markedly impaired or that the myocardium has passed beyond its ability to respond to direct stimulation. Driving such a heart-muscle is not only futile but also often fatal.

In cases of simple dilatation, in painful crises of exophthalmic goiter and in weak hearts of the asthenic type digitalis is the drug of choice.

Digipuratum is invaluable in dealing with the ordinary weak heart with dilatation, but if the observations of Cow of Cambridge are correct, would be a dangerous remedy in cases in which there was marked coronary involvement, because of its tendency to produce excessive contraction of these vessels.

The treatment of the lesser cardiac pains resolves itself invariably into a treatment of cardiac insufficiency and need not be especially considered with respect to the use of drugs. It is of importance, however, in relation to the prevention of major seizures.

The element of rest is of immense importance in all of these cases, and demands much judgment and circumspection with relation to the degree of limitation of physical activity and the length of time during which it shall be enforced.

Cases of most alarming cardiac pain, easily induced and of frequent occurrence, may entirely disappear over long periods, provided rest for the body and mind is strictly enforced for a sufficient time but followed by a systematic training of the heart to take up extra burdens.

In cases of minor dilatations, a few days of absolute rest combined with cardiac stimulation will often suffice to remove entirely and for long periods pains of a most misleading sort often far removed from the heart, and these may also do away with symptoms of gastric distress which may perhaps have been interpreted as due to a gastric neurosis or even more serious organic lesions.

The diet is one of the most important factors, and it has seemed to me that many of the instructions relating to it in connection with the severer types of cardiac attacks are mistaken ones. I believe neither in starvation nor in liquid diet for these individuals, but have invariably found that light, dry feedings six times a day are best borne by these susceptible patients, to whom any condition of flatulence often means a prompt resumption of cardiac pain.

In the asthenic cases, in which the pain or discomfort is usually of mild grade, one of the chief needs of the individual is frequent nutritious feedings, for one of the primary essentials if proper compensation is to be maintained consists in improving the nutrition and markedly increasing the weight of the individual.

It is unnecessary to state that massage is valuable in nearly all types, as are passive and resistive movements when they can be absolutely controlled by the attending physician and not left to the independent judgment of an overzealous masseur.

A resort to the various establishments in which hydrotherapy and massage constitute the chief factors of treatment should be permitted only when the attending physician can direct and limit the procedures used.

As a matter of practical experience I know of no one element which has proved so disastrous to patients with advanced cardiovascular disease and to patients of the asthenic group as have been the visits made to establishments of the type so prevalent in our own country where a certain routine treatment is too often instituted without a proper appreciation of the factors involved and usually without consultation with, or reference to, the attending physician.

SUMMARY

1. While recognizing its wide variability, we should assume the unity of pain of cardiac origin and found our therapy on the one chief causative factor—cardiac exhaustion.

2. The wide distribution of cardiac pain in the superficial sensory areas has led to misinterpretation of the lesser degrees of pain of the same origin and hence, too much neglect and diagnostic error.

3. The efficient treatment of cardiac pain in the broader sense resolves itself into the management of an insufficient, overfatigued heart muscle.

4. Mental and physical rest and regulated exercise offer the best means of restoring a proper circulatory balance.

5. A proper valuation of the subjective symptoms of cardiac overstrain, early oversight and the timely and judicious treatment of cardiac lesions is quite as important as is the early recognition and treatment of tuberculosis.

324 Summit Avenue.

ABSTRACT OF DISCUSSION

DR. FRANK BILLINGS, Chicago: I cannot altogether agree with Dr. Greene in his classification of cardiac pain, especially in regard to the minor pains of the heart, which occur especially in that condition described by Spiller as asthenia congenita universalis. While people of this class may present conditions of the heart-muscle which give pain when overfunctionating or functionating no more than normal, they will also present pain elsewhere. It is not alone for heart-pain that we treat them, but for discomfort due to a hypersensitiveness of the whole cerebrospinal axis; and, while some of them may present evidences of dilated heart or heart that does not do its full work and may suffer from pain referred to the heart, I would not classify their condition with the more important condition that we call angina pectoris vera. As to the cause of pain in true angina pectoris we are in doubt. The late John Musser stated fully fifteen years ago that he had seen patients who suffered from angina pectoris cease to have pain after secondary heart dilatation developed. With lessened intracardiac tension pain ceased. This would indicate muscle-spasm as a cause. I have seen heart pain due to ischemia of the heart-muscle just as we get intermittent claudication from stoppage of blood in the calf-muscles when the patient is moving. That complete loss of blood in the muscles of the heart does not cause spasm seems probable. I have seen patients who suffered from complete thrombosis or occlusion of the coronary artery, which deprived the ventricle-muscles entirely of blood, die within twenty-four or forty-eight hours afterward without heart pain. The fact that patients with angina pectoris vera have, as a rule, degeneration of the heart-muscle, sclerosis around the openings of the coronary arteries or other morbid changes would imply that the circulation of the muscle of the heart is diminished. It is fatigued, it is true, because it has less blood. One who has watched these cases must separate them from the latter group.

As to the treatment for the prevention of attacks, I agree with Dr. Greene that the proper diet, light in character, must be given, but there must be absolute control of the patient also. The emotional element often found in these cases is as much a symptom as the pain itself and sometimes causes an increased arterial tension preceding the attack. Atropin may be used for treatment during an attack, but morphin to calm the patient and relieve him of pain, in conjunction with the nitrites, is the chief remedy. The nitrites given to patients before physical exertion will prevent the attack. Their use for the relief of existing pain is not of much worth.

DR. A. D. HIRSCHFELDER, Baltimore: I wish to emphasize the importance of recognizing that class of patients with precordial pain, often quite severe, and perhaps paroxysmal. Regarding the distribution of these pains we feel them according to the site of the heart in the fetus, not at the site at which the heart and the portions of the heart lie in the adult body. In other words, if we wish to study the symptomatology of angina pectoris or cardiac pains, we should not study the adult, but the embryo. The same applies to the confusion which Dr. Greene referred to between the gastric-ulcer pains and the gall-bladder pains and angina pectoris and I should like to add the pains from swallowing air. All these structures in the embryo are closely associated at near-lying levels and the pains are referred along the same nerve-structures. In angina pectoris we have a hyperalgesia subsequent to the attacks of the same nerves so that a very mild air swallowing, which in the normal individual would not give rise to great distress, in a patient who has just had angina pectoris may give rise to absolute writhing in pain. If one makes a careful examination of a patient who complains simply of precordial pains without any marked symptoms one may find very definite signs of either an outspoken or a mild Basedow. It is most important that the heart-muscle should be adequately nourished for the nutrition of the heart-walls seems to bear a definite relation in certain patients to the level of blood-pressure. I have had occasion in one patient to note that there was a very definite relation both upward and downward to changes of the blood-pressure. This woman subsequently died apparently of coronary sclerosis. I should like to emphasize the importance of rest and of slow movements. For example, a man who consulted me about two years ago was having pains which seemed to follow all the characteristics of a definite coronary angina, on the slightest exertion (with the angina he had general arteriosclerosis—he was 72 years of age). The question was whether this man should retire entirely from business and lead the life of an invalid, or whether he could under any circumstances, go on with it. I suggested to him that he take care to rise slowly from his chair, to stop on the stairs long enough to make one deep inspiration at least between going from one step to another and to exercise other simple precautions. Without any other measure whatever, he has recovered and for the past two years he has not had a single pain or a single bit of precordial discomfort.

DR. PHILIP S. ROY: In patients suffering from true angina the attacks will sometimes disappear. One condition which will cause the disappearance of the anginal pains due to exhaustion of contractility of the heart-muscle is mitral regurgitation. This valvular condition for a time relieves the heart of its strain. I believe that when we are asked for prognostic advice in angina, a series of radial tracings will be our greatest aid.

DR. W. H. WITT, Nashville, Tenn.: It is true that we cannot expect anything more than the most temporary action of amyl nitrite, but its effect is quite comparable to that of morphin in severe gall-stone colic. We cannot say why, but in the great majority of cases of gall-stone colic the patients get complete and continued relief until sometime later they have another attack. I think the same thing is quite true in a fair proportion of cases of angina pectoris, and in two cases particularly I have been able to add greatly to the comfort

of the patients by having them keep pearls of amyl nitrite and break them when they feel an attack coming on. I grant you the effect is transient, but the result may last long enough to prevent such cardiac failure or strain as might cause death. Morphin does give great relief, but you see some cases in which morphin has no effect at all as you see cases in which amyl nitrite has no effect. I have learned, in cases in which morphin will not relieve to give a very unfavorable prognosis, that the patient will possibly not improve much. Younger people, who are more or less neurasthenic, who have a mild degree of pain, are quite a different class from those with anginoid or typical anginal pain. From the practical point of view it is not wise to make any distinction between typical attacks of angina and the milder attacks in persons 55 or 60 years of age. Essentially the attacks are the same and the patient is in danger. I was particularly interested in Dr. Hirschfelder's advice for slow movement and I think that it saves patients.

DR. B. FANTUS, Chicago: I should like to say a few words in favor of bromid in the prophylaxis of anginoid pains. According to the helpful classification of Dr. Greene anginal pains are due to changes in the heart-muscle and to excessive nervous irritability. It seems that, where the latter condition predominates, bromid might be of value. I know of a number of patients who have again and again taken bromid because they thought it made their attacks less frequent.

DR. LOUIS FRANCISCO ROSS, Richmond, Ind.: I wish to say a word about slow movements. I happened to have two or three of these patients who could not remember to move slowly, especially to go up stairs slowly, which is most important. I therefore told them to go up stairs as children do, taking the up step with the same foot. After they established this habit they necessarily went up slowly and got on much better.

DR. RAY L. WILBUR, San Francisco: I should like to ask Dr. Greene to speak on these pains from the point of view of "hollow-organ pains." We have in the bowel similar spasmodic conditions. These pains occur also, apparently, in the wall of the ventricle. I wonder whether the use of strychnin is of any service. Perhaps the combination of morphin and strychnin is better, since we find the bromids of benefit in limiting the susceptibility to the pain. I should be inclined not to use the strychnin under such circumstances.

DR. CHARLES LYMAN GREENE, St. Paul: The point that I wish to bring out primarily is the fact that we are not at the present time paying sufficient attention to cardiac disease in its earlier stages. We are taught and we have taught others in the past to treat only cases of frank, gross, obtrusive insufficiency. This is no more right in the case of heart disease than in the case of tuberculosis. My asthenic cases have given me an excellent opportunity to study certain minor insufficiencies which in this type of individual seldom become anything serious, and it has been most interesting to see the fragmentary picture and then perhaps a replica in miniature of the anginal attack. These cases cannot represent anything else than hollow-organ pain. Asthenic patients have a hidden nervous irritability; they all show increased knee-jerks and intense psychic response and it is very easy for a slight dilatation in them to cause most curious and occasionally quite severe manifestations of cardiac distress. I have been interested in seeing patients with abdominal localization narrowly escape operation for gall-stones. A patient whom I saw not long ago entirely relieved by a week's treatment of the heart showed an unusual localization of her maximum distress over the lower abdomen. Then pain in the shoulder and back, and curious headaches are often encountered. I believe that we must and ought to consider these various pains as coming from the same cause throughout, representing in every instance identically the same thing, a hollow muscular organ unable to do its work and protesting in its own way. These cases are in fact almost constantly being mistaken and treated as cases of so-called nervous exhaustion and, fortunately, because of this fact these patients are properly nourished and put at rest, which is just what the asthenic heart needs. As regards the institutional care of anginal cases a trip abroad for a patient with genuine angina pectoris is a good thing if they go to the good institutions where they have skilled physicians and where the regimen is properly carried out. I agree with my colleague's estimate of bromids in these cases and I did not speak of the iodids because I do not believe that anyone knows enough about them to talk about their effect in these cases, though we must recognize the fact that a large proportion of our arteriosclerosis cases involving the aorta and the coronaries are luetic and the value of iodids in certain of these cases is unquestionable. I wish again to express my wonder that there should be such morbid fear of giving digitalis. We all know now that the digitalis does not affect the normal heart nor does it affect the heart which is compensating even though diseased. Then why should we be afraid to give the doses required to test its efficiency and establish the presence or absence of a dilatation often unrecognizable by other means?

POTASSIUM PERMANGANATE AS A LOCAL ANESTHETIC TO THE GENITO-URINARY MUCOUS MEMBRANES

A PRELIMINARY COMMUNICATION

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In a search through the literature and on inquiry among my colleagues, some of them genito-urinary specialists, I have not been able to find any reference to or knowledge of the anesthetic action of potassium permanganate. Inasmuch as my own experience and investigation have shown that the drug possesses local anesthetic powers of no inconsiderable degree on the mucous membrane of the genito-urinary tract, I report the fact, together with a brief account of the circumstances which led to its discovery and a limited amount of experimental data in support of it.

Some time ago I found, accidentally, in the following case, that the injection of potassium permanganate into the urethra and bladder caused a transitory but complete desensitization of the mucous membrane of the urethra, anterior and posterior, of such a degree and character as to allow of the painless passage of sounds.

Patient.—White man, had had fifteen years previously, a gonococcus infection, anterior and posterior, which lasted over six months. He complained of bradyuria which dated back to the infection. On examination the patient was found to require fifteen or twenty seconds to void 150 c.c. of urine, the last portion being voided by ejaculatory efforts and manipulation of the penis. The prostate was neither enlarged nor tender; the urine was clear and free from shreds and entirely negative on chemical examination.

He seemed quite timid concerning the examination of the urethra by sounds. Having noted on previous occasions, while using potassium permanganate in irrigating subacute and chronic gonorrheal urethritis, that the primary sensitiveness following injection soon disappeared and was replaced by apparent desensitization I determined to try the effects of irrigating the urethra with solution of permanganate of potassium to see whether a real anesthesia of the mucous membrane could be obtained.

Experiment 1.—5:00 p. m.: Finished irrigating the urethra anteriorly and posteriorly with 1,000 c.c. of solution of potassium permanganate (strength not noted). Irrigation was made with blunt urethral tip not catheter.

5:02 p. m.: Sensation of slight warmth in urethra. A No. 24 F sound sterilized and well lubricated was passed painlessly.

5:05 p. m.: A No. 26 F sound was passed painlessly. Very slight sensation of stretching experienced, not disagreeable.

5:15 p. m.: Introduction of sound into anterior urethra causes smarting.

Experiment 2.—Same patient on another occasion.

4:25 p. m.: Finished irrigating urethra and bladder with 1,000 c.c. of solution of potassium permanganate 1:2,500.

4:27 p. m.: The urethra, tested with lubricated sound 26 F, was found desensitized, and the instrument passed into the bladder without pain.

4:30 p. m.: No. 28 F sound passed without pain. Some sense of tightness felt as sound passed stricture of large caliber. Removal of instrument required slight traction but caused no pain *in situ*.

Experiment 3.—Normal urethra.

6:02 p. m.: Finished irrigation of urethra and bladder with 1,000 c.c. of 1:5,000 solution of potassium permanganate.

6:04 p. m.: Mucous membrane of meatus slightly less sensitive than normal to touch of sharp instrument (sterilized needle).

6:05 p. m.: Very slight sensation of warmth in urethra.

6:07 p. m.: Passage of No. 26 F sound effected with only very slight sensitiveness more especially in the deep urethra and this quite negligible. Slight discomfort felt after withdrawal.

6:10 p. m.: Meatus almost desensitized to touch of sharp instrument. Discomfort following withdrawal of No. 26 F sound gone.

6:14 p. m.: Passage of end of No. 28 F sound into anterior urethra produces burning and smarting and attempts at further penetration cause pain. Sensation of meatus to sharp instrument returned.

The anesthesia period obtained in the above experiment (No. 3) is therefore slightly less than ten minutes, coming on within two minutes after completion of irrigation with solution of potassium permanganate in dilution of 1:5,000. An attempt to reirrigate the anterior urethra in Experiment 3 with 1:5,000 solution at 6:20 p. m. produced smarting and burning and was discontinued. A period of redesensitization appeared which lasted five minutes.

The preceding experiment was repeated on divers occasions and the results found to be the same.

Experiment 4.—Normal urethra.

5:09 p. m.: Finished irrigating urethra and bladder with 1,000 c.c. of 1:10,000 solution of potassium permanganate.

5:11 p. m.: Meatus sensitive, though perhaps less than normally, to touch of sharp instrument.

5:14 p. m.: Passage of No. 28 F sound into urethra accompanied by some smarting, particularly when passing through posterior urethra.

DEDUCTIONS

It will thus be seen by Experiment 4 that anesthesia of the mucous membrane of the urethra so completely and satisfactorily produced by solutions of potassium permanganate in the strength of 1:2,500 or even in 1:5,000 is incomplete and unsatisfactory when the dilution is raised to 1:10,000.

The minimum limit of dilution to obtain satisfactory anesthesia therefore lies at 1:5,000. The maximum limit of concentration will of course be governed by the fact that solutions in excess of 1:2,000 in the posterior urethra should not be used.

It is perhaps superfluous to speculate on the explanation for the undoubted anesthetic power of potassium permanganate on the urethral mucous membrane. When a solution of this substance comes in contact with organic matter as albumin the permanganate parts immediately with a large portion of its oxygen becoming thus reduced. The oxygen attaches itself to the proteid producing a certain degree of chemical change, probably in the direction of oxidation. After the permanganate is reduced it loses its action.

Experiments which I have made on the skin show that it is entirely unable to produce any anesthesia here. This is probably due to the impossibility of penetration to the nerve terminations before reduction of the compound takes place.

The practical deductions from the facts above stated are limited though important. A method of producing a satisfactory anesthesia of the mucous membrane of the urethra and bladder devoid of any possibilities of toxic phenomena whatever and extremely simple in its application should be welcomed by those who are called on to perform painful instrumental manipulations on the genito-urinary canal and especially so by those who are called on through unfortunate circumstances to submit to them.

1730 Connecticut Avenue N. W.

NEW STYLE DRAIN-PAN FOR OPERATING-TABLE

W. M. HAYES, M.D., NEW ORLEANS

The old style drain-pan being oval or nearly circular, there has always been trouble in keeping it sufficiently near the operating-table. When placed against the lower supporting rods of the table, the pan would rotate from place to place along the side of the table, allowing the refuse which should drain from the Kelly pad into pan, to go on the floor, much to the annoyance of the operator and his assistants.

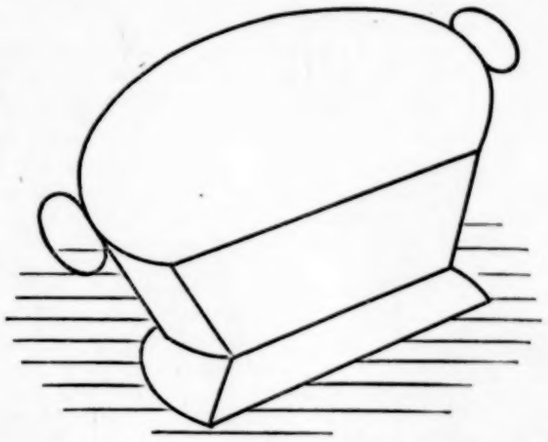


Fig. 1.—New drain-pan, showing flat back surface.

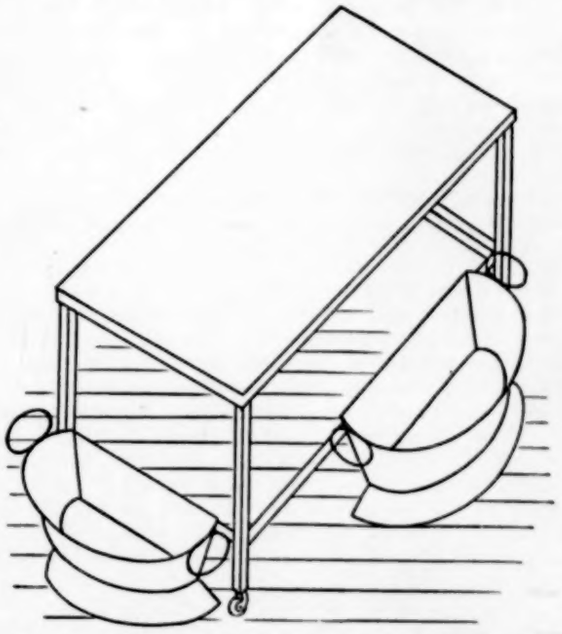


Fig. 2.—Pan placed squarely against lower rods of table.

This pan (Fig. 1) is two-thirds round or oval while one-third has a flat back surface which permits the pan to be placed squarely against the lower rods of the table (Fig. 2), thus preventing it from moving from its original place.

1525 Calliope Street.

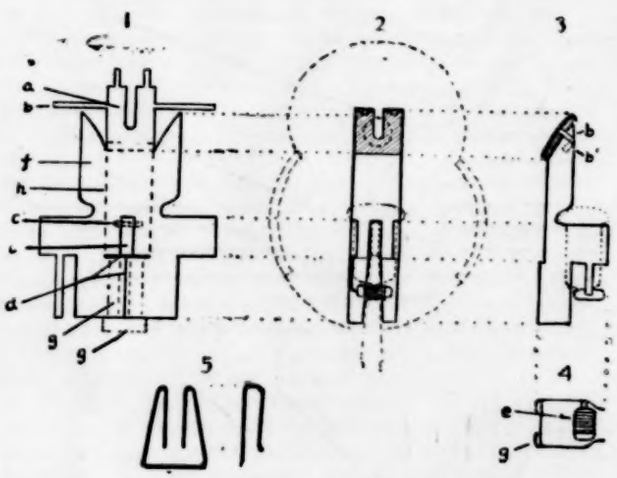
SIMPLE ELECTRIC ATTACHMENT FOR OPHTHALMOSCOPE

M. H. TODD, A.M., M.D., BALTIMORE

The electric ophthalmoscope is very much more convenient than the ordinary type—especially when the patient is in bed—but the cost is excessive in comparison with the convenience, from the point of view of the average physician. I have devised a very simple attachment for the usual form of instrument, which can easily be made for less than a dollar.

The necessary materials are a piece of sheet brass as thick as a postcard, and about 6 inches square to allow for errors; a small electric light of the sort used in the familiar hand flash-light, together with its battery; a small mirror, and 3 feet of double flexible electric-wire cord.

The tools required are the following: A pair of old shears; a small pair of pliers with quite narrow flat nose, and either a very thin small flat file or, much better, the use for half



Electric attachment for ophthalmoscope.

an hour of a dentist's engine, equipped with a narrow carborundum wheel.

The diagrams give the plan in detail. The sheet of brass (Fig. 1) is cut along the solid lines and bent along the dotted lines, as shown in the other figures. The exact measurements and proportions vary with the individual ophthalmoscope and mirror used. The mirror-back is shown at *a*; *b* indicates the stay-pieces that hold *a* firmly against the free diagonal ends of the sides *f*, the mirror itself intervening; the ends of the strips *b* are either soldered to the sides *f*, leaving room to slip in the mirror, or simply bent tightly over the edges of the sides, as shown in dotted lines at *b'* (Fig. 3); *c* represents a slot that fits over the lower bearing of the original mirror of the ophthalmoscope (the position and character of this vary with the instrument); the original mirror, incidentally, will have to be removed; *d* shows a T cut that enables pieces at *g* to be bent as shown, from the rear, in Figure 4; at *e* (Fig. 4) is shown the insulated contact for the pole of the electric lamp; it is simply a piece of rubber, impaled on a little strip of brass as pictured in the several figures, and wound with bare copper wire; the position of the light and the ophthalmoscope itself are indicated by dotted lines in Figures 3 and 4. Finally, Figure 5 gives the shape of a spring clip made of steel or spring-brass wire, which engages by its free ends in grooves *g* and holds the attachment firmly to the instrument.

The little mirror should be about three-eighths inch square, and has a slot one-sixteenth inch wide extending to its center; it is fashioned from a five-cent hand mirror, or, perhaps better, from a watch-glass, silvered to make a concave mirror. Any good text-book of chemistry will give the solutions used. The back of the mirror should be coated with shellac, after shaping, to prevent the silver from loosening. The cutting is done with a file if necessary, but a much smoother and easier result is attained with a dentist's engine.

The two wires in the double cord are fastened, respectively, to the contact *e* and to some part of the body of the attachment itself. This may be done with solder, or by simply snipping up a little strip from the attachment with scissors and then firmly bending it round a loop in a piece of plain copper wire, the end of which is in turn wound round one of the flexible wires of the cord. The other end of the cord, of course, goes to the battery. Care should be taken that the circuit is complete only when the electric light is in position.

The bulb of the light itself is painted black except for a triangular area, equilateral, with apex at center of bulb and base near circumference. It is preferably silvered first, perhaps, to get the benefit of reflected light within the bulb.

The instrument as described gives a very satisfactory view of the fundus; and when painted dull black it is also neat in appearance, a point perhaps worth mentioning.

For the newer style of ophthalmoscope, the following changes are made: The slot *c* is modified by leaving the hinder end of the little flap attached, the flap then being bent up to form an additional point of support for the lamp. An additional slot *c'* is added to fit over the lower bearing of the original mirror (the mirror must be removed by gently prying up one end). The T-shaped cut *d* is omitted, and the main line of bending, *h*, is continued back to the end, thus omitting flaps *g*. A little extra flap *g'* is utilized to elevate slightly the hinder end of the attachment and bring it parallel with the ophthalmoscope by turning it under the hinder end as a point of support.

REPORT OF A CASE OF HEMATOSPERMIA DUE TO HIGH BLOOD-PRESSURE, ASSOCIATED WITH CHRONIC INTERSTITIAL NEPHRITIS

RALPH B. SCHEIER, M.D., SAN FRANCISCO

History.—G. L., American merchant, aged 37, married, a non-user of tobacco or liquor, presented himself for treatment, April 16, 1910. The patient was "feeling in the best of health," but had noticed on several occasions that the penis was covered with blood after intercourse. At first this condition occurred at intervals of one week or more. The condition gradually grew worse and blood was observed after every act of coition. On several occasions, on awaking in the morning, he found his nightgown soiled with blood and semen. This was not accompanied by erotic dreams. The patient's father died at the age of 50, cause unknown. His mother died at 63 of heart-disease. His brother died of pulmonary tuberculosis. The patient had gonorrhea on two occasions, the last attack in 1905. He then weighed 216 pounds. He developed a slight but obstinate cough and lost 20 pounds in three months. He had night sweats and felt weak. On several occasions he suffered from hemoptysis. Tubercle bacilli were demonstrated in the sputum. The patient was advised to live in southern California. He was put on a hygienic regimen and after a period of one year made a complete recovery. His weight and strength were regained, the cough disappeared and no tubercle bacilli were found in the sputum. No lung symptoms have since appeared.

Physical Examination.—Patient was well nourished and well developed, height 6 feet 1 inch, weight 216 pounds. Color, pasty pale, mucous membranes normal in appearance, breath bad, teeth excellent, tonsils hyperemic and enlarged. Lymphatic system negative. Heart normal in size; faintly audible systolic murmur heard at mitral area. Apex-beat not visible. Arteries negative. Blood-pressure 210 mm. mercury. Lungs: slight dulness at right apex, with prolonged expiratory sound

(general condition precludes active process). Liver dulness normal, spleen not palpable. Abdomen tympanitic. Sleep and appetite excellent. Nervous system negative. Urethra and bladder of normal appearance on endoscopic and cystoscopic examinations. Prostate gland found normal on palpation. Seminal vesicles not palpable.

Laboratory Findings.—Blood: hemoglobin 90; erythrocytes 4,800,000; leukocytes 10,000; differential count normal. Urine: 2,375 c.c. voided in twenty-four hours; color, pale amber; reaction neutral; specific gravity, 1.010; albumin, 0.2 per cent.; indican present. A few granular and waxy casts, and a few erythrocytes and kidney cells show in sediment. Prostatic fluid normal. Semen, reddish-brown fluid; unstained specimen shows many motile spermatozoa. No tubercle bacilli seen in three specimens; no gonococci. Semen gave definite blue color with Obermeyer's reagent and chloroform, showing presence of indican.

Differential Diagnosis.—Urinary findings with high blood-pressure made the diagnosis of chronic interstitial nephritis obvious. The blood seen after coition came from some part of the genito-urinary tract. Kidney, bladder and urethra were eliminated as no blood was observed in the urine and none appeared after micturition. This was further confirmed by endoscopic and cystoscopic examinations. The time of occurrence distinctly showed the lesion to exist in the seminal vesicles or ejaculatory ducts. Neoplasms, tuberculosis, gonococcic infection, concretions, acute vesiculitis, syphilis or essential hemorrhage might be responsible for the hematospermia. Neoplasms were eliminated, as no growth was palpable (no manifestations have since developed). Tubercle bacilli were not evident on microscopic examination and injection of semen into a guinea-pig proved negative; no nodules on palpation. Gonococcic infection was ruled out by negative microscopic examination. Concretions were not probable in the absence of colic, aspermia, sexual irritability or evidence on palpation. Acute vesiculitis was ruled out by absence of inflammatory manifestations. A negative Wassermann test excluded syphilis. The high blood-pressure of 210 mm. Hg, associated with the chronic interstitial nephritis, was then assumed to be the causative factor, as confirmed therapeutically.

Treatment and Result.—Diet was modified, and 150 gm. meat allowed daily, but no cabbage, beans, sprouts or any food tending to produce tympanites was permitted. A light evening meal was allowed. As the patient had been wearing very light athletic underwear (sleeveless and half pants), light wool, full length was substituted. Cold baths had previously been taken daily; these were absolutely interdicted and the patient was directed to take warm baths at bedtime several times weekly. Fluids were limited to 1,500 c.c. daily, and a moderate amount of exercise was ordered. Artificial effervescent Carlsbad salt, 2 drams in a cup of hot water, was ordered to be sipped slowly every morning fifteen minutes before breakfast. To reduce the blood-pressure sodium nitrite, in 2½-grain doses, was given three times daily.

The condition of the semen showed a marked improvement a few days after treatment was instituted; the bright red color of the blood gave way to a faint discoloration which gradually disappeared at the end of two weeks when no trace could be observed either macroscopically or microscopically. At this time, the administration of sodium nitrite was stopped as the blood-pressure was reduced to 160 mm. Hg. Carlsbad salt was continued with modified diet and hygienic directions. The urine was examined twice monthly. Each succeeding examination showed marked diminution in the number of casts. At the last few examinations no casts have been visible, and albumin has remained at 0.05 per cent. Indicanuria is absent. On two occasions in the past three years a slight trace of blood has been seen in the semen. Each time the blood-pressure registered over 200 mm. Hg and the condition yielded to agents directed to reduce the pressure.

CONCLUSIONS

Possibly many cases of so-called essential hematospermia could be traced to high blood-pressure or underlying pathologic conditions. The presence of indicanuria, tympanites and obnoxious breath in this case demonstrating intestinal fermentation, the subsequent correction of which was followed by improvement in the blood-pressure and urinary findings, serves to emphasize a probable connection between the intestinal toxemia and chronic nephritis.

126 Stockton Street.

INFANT DISEMBOWELED AT BIRTH—APPENDECTOMY SUCCESSFUL

EDWARD N. REED, M.D., CLIFTON, ARIZ.

I was called to attend Senora Y. A., a Mexican woman, in confinement, March 14. I found that the head of the infant was already free, and with the next pain, a moment later, the trunk was expelled. I was astonished at finding that the whole intestine, both small and large, was outside the abdominal cavity. Examination showed that the bowels had passed along inside the cord for about two inches, at which point the walls of the cord had ruptured, allowing the bowels to escape laterally.

No preparations for the confinement had been made; the bed was filthily dirty and the mass of intestines was thickly sprinkled with bits of straw, feathers, crumbs of food and fecal matter from the mother.

I had left the bedside of a woman just about to be delivered, in order to respond to this call. I hurriedly ligated the cord, delivered the placenta, and, wrapping the baby in the cleanest thing I could find, returned to the patient I had left.

Finishing this case I called my colleague, Dr. T. B. Smith, and we went together to see the disemboweled infant and took it at once to the Arizona Copper Company's Hospital. It was placed on the operating table two hours after birth. By this time the bowels were matted together with fibrinous adhesions which included many of the particles of debris mentioned above. They were cleansed gently with sponges and warm salt-solution, but this cleansing was not very thorough, of course. The appendix, three-fourths of an inch long, seemed to be contused and swollen and a catgut ligature was thrown around its base and it was then removed. The umbilical opening admitted the tips of two fingers. It was enlarged for half an inch upward and downward and the cord-bearing edges were trimmed off. The intestines were then replaced and a hurried closure was made with one layer of buried catgut and one of silkworm-gut.

The child made an uneventful recovery, save for one small stitch-abscess, and is at this date well and growing normally.

The Body as a Chemical Laboratory.—The body is a great chemical laboratory which is constantly dealing with a variety of chemical compounds, and the processes are of such a complex and unique nature as to baffle largely the most refined methods of organic chemistry employed for their detection. The proteins, the carbohydrates, fats, etc., have to undergo many changes in the course of their amalgamation with the tissues of the body. They are ultimately subjected to regressive processes, and are eliminated from the body in the form of relatively simple compounds, such as carbonic acid, urea and uric acid. This long physiologic metamorphosis, with its intermediate products, is at present only known to us in part, and still less can we speak definitely of many pathologic phases of metabolism, which lead to sundry forms of auto-intoxication. At any rate the chain of events may result in the production not only of useful and indifferent, but also of injurious and toxic bodies; while any check to the normal processes of elimination may lead to an accumulation in the system of normal waste products and a consequent intoxication. Carbon dioxid, urea and bile may respectively lead to asphyxia, uremia and cholemia; and in the diabetic coma we have a classical example of an auto-intoxication.—Allan Macfadyen, in *Clin. Jour.*

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SATURDAY, JULY 19, 1913

LIME IN THE DIETARY

The losses of inorganic elements of the body which are incurred in the metabolic processes need to be repaired quite as much as does the depletion of the stores of energy-yielding substances. Although it is well realized that the requirements of protein, fat and carbohydrate are varied by numerous and diverse considerations, particularly the size and muscular activity of the individual, and although it is appreciated that the protein needs in particular are somewhat unlike at different periods of the life cycle, as contrasted in the adult and the growing organism, yet in the case of the mineral nutrients the rational demands of the dietary are far more uncertain.

We venture to maintain that there is considerable neglect, in a practical way, of the bearing of the variable requirement of inorganic salts in human nutrition. Undoubtedly an immature and growing person demands a proportionately greater supply of lime, for example, in the ration than does a fully grown person. Experimental pathology has adequately demonstrated that it is possible to develop rachitic conditions of the bones in growing animals by a deficit in food calcium, though the possibility of accomplishing this successfully in the mature animal is not so conclusively demonstrated. In starvation there is a continual loss of lime with both urine and feces; and there are many conditions in human disease in which partial or complete inanition is an accompaniment. In pregnancy the developing fetus constitutes an immense drain on the lime-supply of the mother, so that an extensive impoverishment of the system in this manner may initiate intense pathologic symptoms.

These familiar facts lend emphasis to the contention that the lime requirements as well as those for other inorganic substances vary with the physiologic conditions and activities of individuals. The situation has been expressed in the case of animals by recent writers as follows:[1] A growing animal, a starving animal, a pregnant animal and a milk-producing animal each has its specific drains on the mineral nutrients. All of the conditions here involved are encountered as a part of the physiologic experience of humankind; and no consideration of diet and nutrition in health or disease will be complete until our present knowledge of the extent and modifications of these requirements is greatly extended.

Here is a field rich in promise of reward for the investigator. Some of the factors involved are already recognized. Thus in the case of lime, intestinal conditions determine to some extent — how much is not fully ascertained — the degree of absorption or elimination. With the recognition that calcium, magnesium, iron and phosphate are secreted into the bowel by the intestinal mucosa and lost to the body in this way quite as well as by the kidney, the problem has increased in complexity. The undue presence in the intestine of one ion or element which enters into insoluble combination with another may rob the organism of some needed constituent. Thus phosphate may withhold or withdraw calcium. These interrelations and interreactions among the inorganic food constituents are scarcely appreciated as yet. They make it clear why the same amount of an element like lime may have quite different nutritive import according to the accompanying situation in the intestine. What might ordinarily mean a positive lime balance, that is, an excess of income over outgo, may be converted into a negative one by the mere advent of a new element or other disturbing factor in the diet or the alimentary conditions.

Steenbock and Hart have emphasized some of these points very succinctly. A liberal assimilation of nitrogen does not necessarily imply an assimilation of lime even when the animal's supply of lime is considerably depleted. These are separate and distinct functions of the alimentary tract. A perverted lime metabolism which ultimately would end in an extreme impoverishment of the skeleton in lime may be merely the result of other physiologic disturbances.

One feature of this subject in particular deserves widespread attention. It is the influence of lactation on the lime requirement. The demands here made on the organism follow closely on those incident to the development of the fetus. As Steenbock and Hart point out, the mammary gland during its activity constitutes a severe drain on the skeletal lime-supply during periods of insufficient calcium assimilation. During periods of insufficient phosphorus assimilation it indirectly causes a waste of lime from the skeleton. Throughout lactation therefore there should be in the dietary a liberal supply of lime, far in excess of the maintenance requirement of the individual. Some of the most popular human foods, such as bread and meat, are so deficient in calcium that these needs deserve conspicuous statement. Too little attention is paid in practice to such specific requirements of nursing mothers. The limits of safety are still to be learned.

1. Steenbock, H., and Hart, E. B.: The Influence of Function on the Lime Requirements of Animals, Jour. Biol. Chem., 1913, xiv, 59.

COMPARATIVE MORTALITY OF MARRIED AND SINGLE PERSONS

An opinion has existed for many years that, on the average, married persons live longer than those who are single, and particularly that married men live longer than single men; but it has been rather difficult to secure data to establish this conclusion. The age classifications of censuses and of state departments of health have often been defective in the material necessary for definite conclusions, and besides, too few age classifications were made. The federal censuses of 1890 and 1900, for instance, were of little value for this study because the age classifications, 15 to 44, 45 to 64, and 65 and over, gave small opportunity for comparative mortality. Age and sex have so much influence on mortality that the effect of each of these must be eliminated before the possible effect of the marriage state on the death-rate can be determined. The comparison to be of value for statistical purposes and for conclusions as to health and life-expectancy must be between the death-rates of persons of the same sex and age, but of different marital conditions.

In 1909 the State Department of Health of New York began to tabulate the deaths in that state outside of the cities of New York and Buffalo in classifications by sex, age and marital condition which make it easy to draw conclusions as to the influence of these on the death-rate. When these figures were taken in connection with similar statistics for the population living on the same area in 1910 and similarly classified, as recently published by the federal Census Bureau, it became possible almost for the first time in this country to study mortality by marital condition. The New York State Department of Health then placed the problem in the hands of Walter F. Willcox[1] of Cornell University, who has worked out the statistics to their conclusions.

The most obvious fact indicated by the figures is that the death-rate for married men is much lower than that for single men at each age-group from 20 to 80 plus except the highest, and even there it is about the same. From 20 to 30 the death-rate among married men is 4.2, while among single men it is 6.6. From 30 to 40 the death-rate among the married men is slightly under 6, while among single men it is nearly 13. From 40 to 50 there is an even greater difference. The death-rate among married men is 9.5, whereas among single men it is 19.5. From 50 to 60 there is less divergence in the death-rates, but there is a difference in favor of the married of nearly 11 deaths per year per thousand. Even from 60 to 70 the death-rate of married men is less than 32, while that of the single men is 51.

Undoubtedly the lower death-rate among married men is partly due to the fact that as a rule those who are in good health are readier to marry, while those with more delicate health, especially if suffering from any definite ailment, are not willing to assume the burden and responsibility of a family. Another factor quite as surely is that married men live much more regular lives as a rule and consequently avoid many of the dangers of irregular living. Besides feeling their responsibility to others they do not take such risks of life or illness, and, as a rule, avoid venturesome expeditions and dangerous occupations. Jacques Bertillon, the French expert on occupational mortality, has found that low death-rates occur particularly in occupations in which the workman is under more or less supervision as regards not only health but also habits of life, and in which he is surrounded by influences tending to prevent dissipation, and conducive to regular hours and habits of life. Bank clerks and fiduciary employees who feel their responsibilities are types of this. Bertillon attributes much the same influence to marriage and family life. The married man is supervised for his own good, and having added incentives to self-restraint and to the care of his health, he has a lower mortality than the bachelor.

This view would seem to be corroborated by the statistics as to the mortality among married men who have lost their wives either by death or divorce. The death-rate among these "unmarried men" is considerably higher than that of husbands of the same age, and even as a rule it is higher than that of the bachelors of the same age. The death-rate, for instance, of widowers and divorced men between 20 and 30 is nearly double that of single men. From 30 to 40 it is only as 14.1 to 12.9, while from 40 to 50 the mortality of divorced and widowers is slightly less than that of single men of the same age. From 50 to 60, however, it is slightly higher once more. At all these ages the mortality-rate among widowers and the divorced is at least nearly and sometimes double that of married men of the same age. "If husbands lose their wives, then," concludes the expert of the New York State Department of Health, "they lose much of the chance of longevity which marriage secured them; and in general the younger they are the more they lose."

Among women the differences in the death-rates between married and single are not so striking. In one ten-year period, that from 20 to 30, married women have a higher death-rate than single women in the proportion of about 5 to 4. This is probably due to the influence of child-bearing at this period; but there is another factor in the statistics for this ten-year period that must not be forgotten. From 20 to 30 the married women have a much higher average age than the single women—that is, every year beyond 20 increases the liability to marriage, but also increases the normal death-rate. The single women are largely grouped from 20 to 25 at this time, and the married women from 25 to 30, particularly now that marriages are so frequently delayed. This compels us to discount not a little of what might otherwise seem to be a very unfavorable

1. Willcox, Walter F.: Month. Bull. New York State Dept. of Health, May, 1913.

influence of maternity in increasing the death-rate among married women at this period. From 30 to 40 the death-rate among the married is lower than among the single and so on for every period up to 80. Marriage adds distinctly to a woman's expectancy of life, though not nearly so much as it adds to that of her husband. The state of health among women after the dissolution of marriage by death or divorce is not so unfavorably affected as among men. The mortality of widows and divorced women is higher, as a rule, than that of wives to a noteworthy degree, and higher also than that of spinsters, though the difference is not nearly so marked as among unmarried, married, widowed and divorced men. From the point of view of mortality, marriage is of much less benefit to women than to men, though for the sake of long life it is sufficient to be well worth considering.

THE KEEPING PROPERTIES OF DIGITALIS AND ITS PREPARATIONS

There has been much work in recent years on the variations in strength of digitalis and its preparations as found on the market.[1] Such variations may be due to two causes: (*a*) variations in the crude drug, and (*b*) variations due to the manner in which the drug and the various preparations made from it have been treated or prepared. It is now well known that the crude drug varies considerably in activity, but the causes of these variations are for the most part unknown.[2] The practical outcome of this work is the demonstration that in order to obtain preparations of uniform activity only physiologically tested leaves should be used. The preparations made from even a good sample of the crude drug may, however, vary greatly in activity. One of the most important factors determining this is the manner in which the drug is extracted. It has been shown that fluidextracts are, relatively, almost invariably weaker and show greater variations than do tinctures; this results from incomplete or irregular extraction. Hence the field of usefulness for the fluidextract is limited and physicians ordering tinctures should insist that genuine tinctures, not the pseudotinctures so often prepared from the fluidextract, should be dispensed.

Another important question concerning digitalis is the keeping properties of the drug and its preparations; the literature on this subject, with many original observations, has recently been discussed by Hatcher and Eggleston.[3] It is well known that the infusion of digitalis, although containing a small amount of alcohol, rapidly deteriorates. Several illustrations of the rapid deterioration of preparations containing only a small percentage of alcohol are to be found in the publications of Edmunds and Hale. The latter workers and also Weis, and Hatcher and Eggleston, have found the widely advertised preparation known as digalen to vary greatly in strength; this may also be due to the low alcohol content (7.5 per cent.). Hence physicians are justified in regarding with suspicion liquid preparations of digitalis containing less than 50 per cent. (the official strength) of alcohol; in fact, Hale has pointed out that tinctures made with 70 per cent. alcohol (the strength required by the Brussels Conference) have better keeping qualities than those made according to the U. S. P. The rapid deterioration of even properly made tinctures when diluted with water has been emphasized by Cushny[4] and also by Hatcher and Eggleston. The latter suggest that physicians should order the necessary dilution to be made by the patient each time he takes the prescribed dose or should employ a vehicle containing a sufficient amount of alcohol.

The next question to be considered is the keeping qualities of a good sample of digitalis or of properly made preparations of the drug. Hatcher and Eggleston consider the wide-spread view that such preparations are liable to rapid deterioration to be unfounded; briefly summarized their conclusions are as follows: Commercial digitalis leaves of good quality deteriorate but little on keeping; the rate of deterioration probably does not exceed 1.5 or 2 per cent. a year. The effects of age, of a small amount of moisture, and of light and heat have been much exaggerated, frequently for the purpose of the commercial exploitation of some specially treated leaves. Fluidextracts several years old also showed no great degree of deterioration, especially if they were made with alcohol stronger than that required by the present U. S. P. Heat below 120 C. (248 F.), applied for a reasonable length of time, did not cause deterioration in digitalis leaves or their preparations.

Modern pharmacologic research is thus throwing light on the variations in the therapeutic value of this old and valuable drug, showing what are the essential and what the unessential factors in the maintenance of a high standard.

THE CONDITIONS FOUND POST MORTEM IN CHRONIC TYPHOID CARRIERS

In view of the importance of the carrier in the spread of typhoid fever and of our present ignorance of any method by means of which the carrier may obtain prompt and permanent riddance of the bacilli, it becomes a matter of interest to study the conditions that are found post mortem in chronic typhoid carriers. The observations on this point are not numerous so far as may be judged from the literature. Without going into details, the results so far recorded, mostly in German literature, indicate that in fecal carriers the gall-bladder is the place where the bacilli vegetate. Usually biliary

1. The Biologic Standardization of Digitalis, editorial, THE JOURNAL A. M. A., June 12, 1909, p. 1931. Digitalis and Its Standardization, Pharmacology Department, same issue, p. 1938. Standardization of Digitalis, editorial, THE JOURNAL A. M. A., April 22, 1911, p. 1198. An Austrian Investigation of Commercial Digitalis Preparations, Propaganda Department, THE JOURNAL A. M. A., Jan. 11, 1913, p. 143.
2. Hale, Worth: Bull. 74, Hygienic Laboratory, 1911.
3. Hatcher and Eggleston: Am. Jour. Pharm., May, 1913.
4. Cushny: Brit. Med. Jour., 1912, ii, 685.

calculi are present and in about one half of such instances typhoid bacilli have been found in the stones.

Bindsell,[1] in his review of the literature, mentions fourteen cases; twelve of the patients were women, and in nearly all bacilli were found in the bile, and in many also in the liver and in the bile-ducts as well as in the contents of the intestines. In some cases no bacilli were found at all anywhere in the body although it was known definitely that during life typhoid bacilli had been excreted for some time after recovery from typhoid fever. These cases may be regarded therefore as examples of healed carriers, and it is of interest to note that here death occurred not longer than one year after the acute attack. It is known that carriers not infrequently rid themselves of the bacilli within a year or so after the inception of the carrier state.

The instance studied by Bindsell is that of a man who at the age of 67 passed through a mild attack of typhoid and remained a chronic fecal typhoid carrier until he died four years later. Bacilli were found in the urine also on three or four occasions; in the feces, however, they were present regularly as shown by frequent examinations. After death bacilli were found in pure culture in the bile in the gall-bladder and large ducts; they were present also in the small intestines and in the interior of stones in the gall-bladder.

Of special interest is the fact that in this case as in some others the walls of the gall-bladder were thick, chronically inflamed, and contained here and there heaps of bacilli that corresponded to typhoid bacilli in shape, size and staining properties. We have learned that in typhoid fever and in acute typhoidal cholecystitis the walls of the gall-bladder commonly show masses of typhoid bacilli, and it is an undecided question whether the bacilli reach the wall directly through the blood, lodging in the capillaries, or indirectly from the contents of the bladder which, it is held by some, becomes infected by bacilli excreted through the liver. Perhaps both these explanations are applicable. At all events, the study of the post-mortem conditions shows clearly that in chronic typhoid carriers of the fecal type typhoid bacilli vegetate in the bile in the gall-bladder (whence they are discharged into the intestines), and in some cases at least they appear to live on also in the walls of the bladder.

These facts explain sufficiently well why it is so difficult, indeed practically impossible, to cure chronic carriers. Opening and drainage of the gall-bladder have proved ineffective, most likely because the bacilli persist in its walls. Even complete removal of the bladder might not be sufficient because of the likelihood that bacilli may be present in the walls of the bile-ducts. Whether or not the conditions in chronic urinary carriers are in any degree analogous to those disclosed in chronic fecal carriers is not known.

1. Bindsell: Bakteriologischer Sectionsbefund bei einem chronischen Typhusbazillenträger, Ztschr. f. Hyg. u. Infektionskr., 1913, lxxiv, 369.

Current Comment

MOUNTAIN SICKNESS IN THE ANDES

In descriptions of mountain sickness it has sometimes been maintained that the manifestations of disease attributable to high altitudes vary in different parts of the world. There might, accordingly, be an Alpine, an Andean or a Rocky Mountain sickness. If this were a definitely established fact, we should logically be compelled to seek at least some of the causal factors of the illness in agencies other than those of mere altitude itself. For altitude, *per se*, with its specific alterations in the barometric pressure and atmospheric relations is a fixed feature of mountain heights, independent of geographical locations or environmental climatic conditions. Ducceschi[1] has been investigating the probability of determinative local influences which might give special character to the mountain sickness in the South American Andes. In the readily accessible parts of these elevations the symptoms are not manifested, as a rule, until a height of 4,000 meters (13,123 feet) is reached. Electric phenomena of the atmosphere cannot be charged with responsibility for the genesis of the manifestations of illness, as has occasionally been asserted; and when the symptoms are in any sense unique, they are, according to Ducceschi, attributable to confusion or complication with other diseases. The types of manifestations seen represent the variable response of the organism to the changed make-up of the blood; they may be classed as respiratory, cardiopathic, nervous or cerebral in character. Ducceschi maintains, however, that the altered composition of the blood cannot be the sole cause of the varied symptoms, for occasionally these arise when any noteworthy changes in the composition of the circulating medium are out of the question. It is suggested as a possibility that the diminished atmospheric pressure may serve as a stimulus to the vagus endings in the lung. Thus a "vagus neurosis" would be called into play, acting reflexly to stimulate all the branches of the affected nervous system and exhibiting individual peculiarities of outcome in different persons. As contributory evidence in favor of the participation of the nervous centers, the observation may be mentioned that people who have become acclimated to altitudes experience upsets on a return to lower levels. Furthermore, it may be noted that seasickness, which is commonly described as a reflex neurosis with involvement of the vagus and its branches, has many features in common with mountain sickness. In some parts of South America we are told that the mal de montagne goes under the designation of "mountain seasickness." In any event it now seems quite certain that whatever the pathology of the disease manifestations, the essence of mountain sickness is the same wherever it is encountered, the world over; and the fundamental etiologic factor is the change in barometric pressure and the modifications in the atmosphere which this is responsible for. All else is incidental, variable and secondary.

1. Ducceschi, V.: Il mal di montagna o Puna nel Sud-America, Arch. di Fisiol., 1912, x, 77.

CAN ANIMALS UTILIZE NITRATES?

There has been a growing tendency in recent years to eliminate the sharp distinctions between the fundamental physiologic processes in animals and plants which were once believed to prevail. The animal organism has been shown in a variety of ways and by numerous illustrative changes to be endowed with a pronounced synthetic capacity such as was formerly ascribed solely to the plant organism. It can build new proteins, blood pigments, fats, etc., out of comparatively simple constructive materials. Quite naturally investigators have attempted to push the search for constructive powers further and further in the direction of the utilization of less complex "building-stones." In the case of the actual elements or very closely related compounds there is, of course, no evidence that the animal can duplicate the functions of the plant, as, for example, in constructing carbon dioxid or similar products into tissue substance or energy stores as do the vegetable forms of life. With respect to elementary gaseous nitrogen the problem has long since been settled. Nitrogen itself does not enter into the metabolic processes in any degree whatever. Lately the inquiry has again been directed to simple nitrogenous compounds, such as the nitrates. Can the animal organism duplicate the unquestioned performance of the plant in utilizing nitrogen furnished in the form of nitrates? Abderhalden and Hirsch[1] have conducted crucial experiments in this field of inquiry with definite results. Nitrogen introduced in the form of nitrate with the diet is quantitatively excreted again as such in the urine. It therefore takes no direct part in the performance of protein metabolism. For larger quantities this was to be expected, inasmuch as the nitrates are undoubtedly toxic under such conditions of dosage. We may now feel assured further that even small amounts of nitrates cannot replace protein in the dietary. Here then the distinction between animals and plants still remains sharply defined.

DEMENTIA TELEPHONICA

This aberration is said to have found place in German legal medicine. An indiscreet Berlin lawyer was adjudged guilty of slandering the post-office administration, which controls the telephone system under the Teutonic polity; here seems an absurdity in American eyes, for among us any citizen may (and generally does, to his heart's content) abuse the post-office or the street-cleaning or any other governmental department, without jeopardy of either purse or person. The particular offense of this Berlin attorney was that he called telephone girls "camels" and "sheep." The former term would hardly seem opprobrious, for the camel is a most estimable, patient creature. The term "sheep" also would seem unobjectionable, as indicating a mild-mannered creature, except for an occasional tendency to "butt in," a thing telephone girls have been known to do when conversation over the wire has reached its most engrossing periods. The culprit's defense was that telephone operators delight to torture the victim at the end of the wire; one day he had called a number nine times within three-quarters of an hour and each time had received the tantalizing answer that "the wire is busy"; complaining then to the central manager he learned that his connection had been free all the while. The court's medical expert testified after an examination of the defendant that the latter was of a highly nervous temperament, and that there were cases of men who had gone insane from telephonic vexation (*Telephonärger*), but that nevertheless he had not as yet passed beyond the state of legal responsibility. He was fined 260 marks ($65), which is after all a good deal of money. There are no doubt many, not only in Germany but also wherever else in civilization the telephone is in operation, who will sympathize with him.

1. Abderhalden, E., and Hirsch, P.: Die Wirkung des Salpeters (Natrium Nitrats) auf den Stoffwechsel, Ztschr. f. physiol. Chem., 1913, lxxxiv, 189.

MUTTON APPROVED

We recently commented on Fish's attempt to rehabilitate "bob veal" in the category of available animal foods.[1] Whatever the final outcome of this effort, or of attempts to discredit any other meat product in the eyes of a skeptical consumer, the place of mutton in the dietary has been secured. The nutrition experts of the U. S. Department of Agriculture[2] have given the meat of the sheep a clean and clear bill, sanctioning from their point of view the popularity which mutton and lamb have so long enjoyed as staple articles of diet. The generally wholesome character of these products is borne out by the government inspection work, which shows that slaughtered sheep seldom need to be rejected as unfit for food. In composition and nutritive value there is little choice between mutton and beef; each is well digested and almost completely utilized in the alimentary tract. And thus the question of choice in this case, as with so many articles of diet, narrows down, not to the problem of physiologic availability or underlying nutritive value, but to the palatability and relative cost. The demands of the taste and the limitations of the pocket-book are dominant factors here as elsewhere.

1. Is "Bob Veal" toxic? editorial, THE JOURNAL A. M. A., March 15, 1913, p. 834.

2. Langworthy, C. F., and Hunt, C. L.: Mutton and its Value in the Diet, Farmers' Bulletin 526, U. S. Dept. of Agric., Washington, 1913.

Medical News

CALIFORNIA

State Hospital Patients Transferred.—In order to relieve the congestion at the Stockton and Napa state hospitals, two hundred patients have been transferred from these institutions to the Agnews State Hospital.

Personal.—Dr. Winslow Anderson, San Francisco, has sailed for Europe.——Dr. Thomas W. Huntington, San Francisco, was given the honorary degree of LL.D. by the University of Vermont, June 25.——Dr. Samuel J. Gardner, assistant surgeon of the Southern Pacific Hospital, San Francisco, was operated on for appendicitis, recently.

Hospital Items.—Plans are being prepared for the new administration building for the Methodist Hospital Association to be located in Los Angeles. The building is to be four stories and a basement in height, 140 by 160 feet, and it is planned, eventually, to erect two four-story wings each 155 by 136 feet.——The Pomona Hospital, erected at a cost

of $50,000, is completed and will be ready to receive patients some time this month. The building is of reinforced concrete, three stories and a basement in height and is intended to serve the district comprising the entire Pomona Valley.

ILLINOIS

To Build Sanatorium.—Dr. R. L. Eddington, Springerton, has purchased a lot in Lacon on which he states he intends to build a sanatorium.

Off for Europe.—Drs. D. M. Keith, John Green, S. R. Catlin and W. R. Fringer and Dr. and Mrs. Horace M. Starkey and Miss Starkey, all of Rockford, have sailed for Europe.

Medical School Favored.—Governor Dunne has signed the bill appropriating $4,500,000 for the University of Illinois for the next biennium. This includes $200,000 for the College of Medicine.

Wilgus Recalled.—Dr. Sidney D. Wilgus, superintendent of the Kankakee State Hospital, who resigned June 30, has been recalled by the board of administration, and will continue to serve until his successor is appointed.

Personal.—Dr. J. J. Leahy, Lemont, has been appointed sanitary inspector of the sanitary district.——Dr. William Barnes, Decatur, was injured in an automobile accident near Peoria, July 7.——Dr. J. D. Dickinson, Galva, was operated on in the Cottage Hospital, Galesburg, recently.——Dr. Edward L. Hill, recently appointed physician to the Southern Illinois Penitentiary, Chester, was severely injured in a gasoline explosion in his garage at Percy and is under treatment at a hospital in St. Louis.——The farm home of Dr. A. H. Arp, Moline, was destroyed by fire, June 30. The loss is estimated at $10,000, partially covered by insurance.——Dr. D. C. Kalloch, a member of the staff of the Elgin State Hospital, has resigned.——Dr. J. R. Flexer, Joliet, is said to have been committed to the Kankakee State Hospital.

Chicago

A Palatial Hospital.—The plans for the new Isolation Hospital which have been prepared provide for an institution to cost $280,000. Every patient will, it is said, have a room or cubicle of his own, with glass walls and provided with a telephone. The hospital is planned to accommodate 136 patients.

Personal.—Dr. James B. Herrick is taking a trip in the Rocky Mountains and will go to his summer home in Vermont, returning to Chicago about October 1.——Dr. Charles H. Miller started July 8 for a six weeks' trip through New England.——Dr. A. L. Lindsay Wynekoop has been elected chairman of the hygiene department of the West End Mother's Council.——Dr. Alexander W. Burke and Dr. Eugenia A. Miller-Klawans have sailed for Europe.

INDIANA

Alumni Election.—Dr. J. Don Miller, Indianapolis, has been elected president; Dr. R. A. Mitchell, Marshall, Ill., vice-president, and Dr. Alfred Henry, Indianapolis, secretary of the Alumni Association of the Indiana University School of Medicine.

Care of the Sick.—Three new clinics have been established by the Children's Aid Association, Indianapolis, especially to care for heat-stricken babies.——Dr. T. C. Kennedy, Indianapolis, has opened a free cancer clinic at his offices under the auspices of the People's Union.——The contract has been let for the construction of the basement story of the new pavilion of the Methodist Hospital, Indianapolis, to cost about $110,000.

Health Exhibit.—The State Health Commissioner has prepared a health exhibit which will be placed in the State House corridors on Sunday. An employee of the health board will be on duty to explain the exhibit and distribute circulars to the visitors. The exhibit is divided into sections treating on tuberculosis, oral hygiene, child welfare, fly prevention and clean milk.

Tuberculosis Notes.—The chief office of the Indianapolis Association for the Study and Prevention of Tuberculosis and of the Marion County Association will be located hereafter in the Public Savings Life Building. From these rooms the state and county red cross seal campaigns and the campaign of education will be conducted.——A new board of managers has been elected for the Twin Hill Tuberculosis Camp, Terre Haute, to take charge of the camp during the present season.

KENTUCKY

Would Buy McDowell Home.—The Frankfort Civic League has adopted resolutions urging the state to purchase the home of Dr. Ephraim McDowell, the pioneer ovariotomist, at Danville.

Tuberculosis Patients in Tent.—The directors of the Paducah City Hospital have decided to isolate the tuberculosis patients in a tent located on the hospital grounds where they will be under the care of the nurses of the hospital.

Tuberculosis Car Starts on Tour.—The health car of the State Tuberculosis Commission started June 24 on a two-years' tour of the state. The work of the car will include exhibits and also instructions in the conservation of health, prevention of disease and proper housing.

Personal.—Dr. Richard R. Elmore, Louisville, underwent operation in St. Joseph's Infirmary, July 3.——Dr. Charles G. Lucas, Louisville, who was operated on recently for appendicitis in St. Joseph's Infirmary, has returned home convalescent.——Dr. C. P. Burnett, Paducah, was operated on June 24 at St. Joseph's Infirmary, Louisville, for hernia.——Dr. John G. Cecil, Louisville, is reported to be critically ill at his home.

State Board Meeting.—At the meeting of the State Board of Health in Louisville, July 9, a resolution was passed that cases of whooping-cough and measles should be kept isolated and that persons suffering from either of these diseases should not be permitted to ride on railway cars or other public conveyances. The board adopted a standard of entrance requirements equivalent of a two years' course in college, applicable to all who intend to practice medicine in the state. The announcement was made that the $25,000 appropriated by Congress for use in fighting the spread of trachoma in the mountain district of the state became available July 1 and that the work would begin under the supervision of the State Board of Health and Dr. John Mullen, an official of the United States Public Health Service, immediately. An effort is being made to have those suffering from the severe forms of the disease treated in the Marine Hospital, Louisville. Of the ninety-one applicants who made satisfactory grades in the recent examination, fifty-eight will be issued licenses to practice medicine. The remainder were sophomores who were examined in certain subjects only.

LOUISIANA

Reciprocal Relations Established.—The Louisiana State Board of Medical Examiners announces that New Mexico and Wyoming have been added to the list of states with which Louisiana has established reciprocal relations.

Leper Captured.—After having eluded the police and health authorities since November last, Steve Loyocano, a leper 13 years of age, was captured by inspectors of the New Orleans Board of Health, June 25, and has been placed in the House of Detention.

Personal.—The gold medal of the American Medical Association for the exhibit of most general excellence and scientific value has been awarded to Dr. C. C. Bass, New Orleans, for his exhibit on "The Cultivation of Malarial Plasmodia in Vitro."——Drs. A. V. and H. A. Veazie have been granted a permit to operate an eye infirmary in New Orleans.

Health Cars Again Tour State.—The health exhibit cars of the Louisiana State Board of Health have resumed their tours of education and are making stops of twenty-four hours or longer at the various cities en route. The train is accompanied by Dr. Oscar Dowling, president of the State Board of Health, Dr. Sidney D. Porter, state sanitarian and director of the hookworm work, lecturers, demonstrators, etc.

Surgeons for Southern Pacific Lines.—It has been officially announced that on the installation of the new hospital service of the Southern Pacific System with Dr. R. W. Knox as chief surgeon, there are to be two division hospitals in Louisiana in addition to the general hospital service in New Orleans. The division hospitals will be in Lafayette in charge of Drs. F. R. Tolson and John Tolson and at Franklin in charge of Dr. B. W. Smith. Dr. E. Denegre Martin has been appointed division surgeon at New Orleans and Dr. J. E. Garrison at Donner. Dr. T. J. Dimitry has been appointed oculist at New Orleans and Drs. F. W. Parham and E. Denegre Martin have been made hospital surgeons. Dr. Paul T. Talbot has been appointed local surgeon of the road at New Orleans and Drs. A. C. King, R. L. Riley and A. J. Babin have been made local surgeons at Algiers.

MAINE

Personal.—Dr. Fred P. Webster, chairman of the Portland Board of Health, has notified the mayor and common council of his desire to retire at once.——Dr. Harrison J. Hunt, Bangor, has been appointed surgeon of the Crocker Land

Expedition which sails to the far north this month under the leadership of John B. MacMillan.

State Association Meeting.—The sixty-first annual meeting of the Maine Medical Association was held in Portland, July 2-3, and the following officers were elected: president, Dr. W. C. Peters, Bangor; vice-presidents, Drs. Eben J. Marston, Bath, and C. T. Emery, Biddeford; secretary, Dr. John B. Thompson, Bangor, and treasurer, Dr. Edwin W. Gehring, Portland; councilors, Drs. Stephen Webber, Calais, and T. S. Dickison, Houlton. Portland was decided on as the next place of meeting.

MARYLAND

Baltimore

Quarantine Station Retained.—The city council ordinance authorizing the mayor to dispose of the quarantine station to the federal government was voted down promptly and without debate, the commissioner of health having returned it with unfavorable comment.

Johns Hopkins Hospital Report.—The annual report for the Johns Hopkins Hospital for the year ended January 31, shows that during the year there were 5,642 admissions and 5,597 discharges, leaving 352 patients in the hospital February 1. There were 87,274 visits to the dispensary. Urgent appeal is made by the superintendent for increased endowment. Two more public wards and additional stories for the present ward buildings are needed.

Personal.—Dr. Christian Deetjen announces that hereafter he will limit his practice to physical therapeutics. He has equipped his residence in Eutaw Place with apparatus for electro-, hydro- and mechanotherapy and has also established an x-ray and radium laboratory.——Dr. William S. Bair is said to have declined an offer of the chair of orthopedic surgery at Leland Stanford Junior University, San Francisco. ——Drs. Ridgely B. Warfield and Thomas H. Buckler have sailed for Europe.

MASSACHUSETTS

Mission Schooner Returns to the North.—Dr. Wilfred T. Grenfell's schooner, *George B. Cluett*, which recently returned to Boston from Labrador, sails next week on her return trip to the mission settlements in Labrador and Newfoundland. She takes with her Dr. and Mrs. John Mason Little, St. Anthony, N. F., formerly of Boston, Dr. Hamrick, New York, and several nurses.

Personal.—Major Frank P. Williams, M.C., M.V.M., Brookline, assigned to Eighth Infantry, has been appointed surgeon-general of the Massachusetts Militia, vice Brigadier-General C. G. Foster, retired.——Dr. Francis D. Donoghue, Boston, sailed for Europe, July 12.——Dr. Thomas Edward Duffee, formerly of Gardner, Mass., has moved to Providence and has been appointed chief surgeon of clinics in the eye, ear, nose and throat department of the Sales Memorial Hospital, Pawtucket.——Drs. Susan Fenton, Boston, and E. B. Percy, Brookline, have sailed for Europe.

Hospital News.—The new City Hospital, Aldenville, is almost completed and will be ready for occupancy this month. The main portion of the building will be devoted to ordinary hospital purposes and in the wings, tuberculosis and contagious disease patients will be cared for.——A recent fire in the Notre Dame Hospital, Lowell, did more than $2,000 worth of damage, but no casualty to patients occurred.—— The Boston Consumptives Hospital Department has established a night clinic at the outpatient department of the hospital at 13 Burroughs Place, in charge of Dr. Cleaveland Floyd.—— Dr. Eva W. Lake has opened a sanatorium for convalescents and sufferers of nervous ailments at Norwood.

MINNESOTA

Convent Transferred to Hospital.—The Visitation Convent, St. Paul, has been transferred to the Norwegian Hospital Association, which will move into its new quarters in September.

Personal.—Dr. J. Frank Corbett, for thirteen years state bacteriologist of Minnesota, has resigned to devote his entire time to his work in the department of experimental surgery in the University of Minnesota School of Medicine. Dr. Elizabeth A. Woodworth will have charge of the state department for the present.——Dr. A. J. Cox, Tyler, who recently sued a fellow townsman for $30,000 for defamation of character, was given a verdict of $10,000 in the St. Paul District Court, June 26.

Tuberculosis Notes.—The petition of Dr. Howard Lankester, commissioner of health of St. Paul, requesting the county board to take the necessary action to commit a tuberculosis patient to a sanatorium has been referred to the board's committee of health, the county attorney and the state and county board of control.——The Children's Hospital at Nopeming, the tuberculosis sanatorium of St. Louis County, located about eleven miles from Duluth, has been opened and there are already nineteen patients in the cottage.——Hennepin County announces that it will build a tuberculosis sanatorium under the county sanatoria act, passed by the last legislature.

NEBRASKA

State Secretaries' Election.—At the annual meeting of the Board of Secretaries of the State Board of Health held in Lincoln, July 2, Dr. E. Arthur Carr, Lincoln, was reelected president; Dr. P. F. Dodson, Wilber, was elected vice-president; Dr. H. B. Cummins, Seward, secretary, and Dr. C. T. Burchard, Falls City, treasurer.

NEW YORK

Personal.—Dr. A. P. Van Deinse, Sayville was operated on for appendicitis in Trinity Hospital, New York City, July 6, and is reported to be doing well.——Dr. R. J. Kingston, Newburgh, has resigned as physician for the Samuel Beskin Mutual Benefit Society after a service of twenty-five years.

Delay in Opening of Preventorium.—The Preventorium for the care of children who have been exposed to tuberculosis, which is located on the Mecklenburg Road about five miles from Ithaca, did not open July 5, due to lack of funds. It is, however, hoped that the opening will be delayed only a few days.

New York City

Off for Europe.—Dr. and Mrs. Clarence Reginald Hyde, Dr. and Mrs. J. H. Storer, Dr. and Mrs. Louis Faugeres Bishop and Drs. Martha Wollstein, Louis Livingston Seaman, Frederick H. Albee and Howard Van Rensselaer have sailed for Europe.

Hospital Society Incorporated.—The Building and Endowment Fund Association of Washington Heights Hospital has been incorporated. The object of the association is the raising of funds to be used solely to acquire real property, erect buildings thereon and endow them for the Washington Heights Hospital.

Traction Company Association Medical Inspection Bureau.—The Brooklyn Rapid Transit Company has made permanent the medical inspection bureau which was started tentatively last December. It gives free medical treatment to all operating employees of its system and requires medical inspection before excuses for illness are accepted. The bureau is in charge of Dr. H. H. Stearns and physicians are in attendance at the division in East New York and at Thirty-Ninth Street and Fifth Avenue, South Brooklyn, at certain stated hours of the day.

Poliomyelitis Admitted to Rockefeller Institute Hospital.—The hospital of the Rockefeller Institute for Medical Research announces that beginning with July 15, patients suffering from acute poliomyelitis will be admitted to the hospital. The cases have not been so numerous during the past two years, although a considerable number have been reported, and it seems likely that there will be a large number of cases arising in the city during the coming season. Physicians who desire to have such patients admitted to the hospital should telephone to Plaza 6800, when an ambulance will be sent.

Personal.—Dr. Wilfred H. Manwaring, formerly assistant in pathology and bacteriology in the Rockefeller Institute for Medical Research, has been appointed professor of bacteriology and immunity in Leland Stanford Junior University, San Francisco.——Dr. Enrico Salvini, ambulance surgeon to the Lincoln Hospital, was thrown from the ambulance and seriously injured in a collision with a motor truck, July 3.——Dr. S. R. Klein has opened a pathologic and bacteriologic laboratory in the Sayre Private Hospital, Mount Vernon, N. Y., and in connection with this a pasteur institute for the treatment of hydrophobia has been instituted.

The Death-Rate.—The death-rate for the week ended July 5 was 12 54 per 1,000 population as against 12.84 for the corresponding week of 1912. The causes showing an increased mortality were whooping-cough, chronic heart and kidney disease combined, and violence. There were nineteen deaths reported from heat stroke against one for the same week of 1912. Notwithstanding the adverse weather conditions, the

infant mortality was considerable below that of the corresponding week of last year. The infant mortality rate for the entire city for the week was 89 per 1,000 children born as against a rate of 104 during the corresponding week of 1912, a decrease of 14 per cent. The death-rate for the first twenty-six weeks of 1913 was 15.04 per 1,000 as against 15.06 during the corresponding period of 1912.

OKLAHOMA

Mahr Exonerated.—A jury in Judge Clark's section of the District Court, on July 4, found Dr. J. C. Mahr, Oklahoma City, State Health Commissioner, not guilty of the charges of habitual drunkenness, gross neglect of duty and corruption in office, for which he was indicted by the Oklahoma County grand jury in April last.

OREGON

Personal.—Dr. G. C. Bellinger has been appointed superintendent of the State Tuberculosis Institute, Salem, vice Dr. P. H. Fitzgerald, resigned.——Dr. E. A. Sommer has been elected a member of the board of directors of the Portland School District, vice Mr. I. N. Fleischner, resigned.

Medical Board Election.—At the meeting of the State Board of Medical Examiners held in Portland, July 4, it was decided that action should be taken against the physicians of the state who are practicing without a license. The board elected the following officers: president, Dr. Herbert S. Nichols, Portland; secretary, Dr. L. H. Hamilton, Portland, and treasurer, Dr. H. L. Henderson, Astoria.

PENNSYLVANIA

Personal—Dr. Ella N. Ritter, Williamsport, sailed for Europe, July 3.——Dr. W. R. Hamilton, Pittsburgh, was knocked from the running board of a street car by a wagon, July 7, and was taken to the Allegheny General Hospital. He was not seriously injured.

Fire at Insane Hospital.—On July 7, a fire that destroyed an old roller mill on the grounds of the South Mountain Insane Hospital, near Wernersville, caused great excitement among the 900 inmates but 300 male patients organized a fire brigade and fought the flames, saving the adjoining structures. The loss is $6,000.

Small-Pox in State Following Circus.—Two cases of small-pox were discovered July 10, at East Lebanon and the State Health Department at once took charge of both cases. Commissioner of Health Porter of New York has notified State Health Commissioner Dixon that small-pox has been found in Hagenbeck Circus at Albany. This show has been to various towns throughout this state, where small-pox has developed and an inspection of the circus was made at the suggestion of Dr. Dixon. On July 5, four cases were reported to the State Health Department from various parts of the state.

Physician Asks Segregation of Feeble-Minded.—On July 11, Dr. Charles S. Frazier called on Governor Tener to sign a bill appropriating $50,000 for the construction on state land of an institution for feeble-minded women and girls.

"There are 17,000 feeble-minded men, women and children in this state, only 2,263 of whom are in proper institutions.

"There are 7,000 women of child-bearing age at large. Statistics show that each bears on an average of nearly eight children, of whom five live to child-bearing age.

"This means that within 15 to 20 years a horde of 35,000 feeble-minded women, capable of procreation may be thrust upon the state.

"Feeble-mindedness is hereditary, beyond peradventure, and is incurable.

"Unless the state takes drastic measures for proper segregation, feeble-mindedness will increase so materially as to become a positive menace to the community.

"Nearly every state save Pennsylvania has proper institutions for the care of this class of unfortunates. For this reason it is imperative that Governor Tener should sign the appropriation bill now before him."

Philadelphia

Heat Increases Infant Mortality.—According to the records of the Bureau of Health for the week ended July 12, there were 130 deaths of children under 1 year of age and forty-two between the ages of 1 and 5. The number of new typhoid fever cases reached forty-three, eight more than the preceding week. Most of these cases were from the section of the city supplied by the Torresdale Filter Plant.

Babies' Clinic.—Another clinic for the education of mothers in the care of their infants was opened in the Ludlow School at Fourth Street and Montgomery Avenue, July 9. Under the direction of Mrs. Margaret Simon, one of the municipal nurses, who has charge of the weekly clinics, lessons in bathing and proper dressing of children are given and the preparation of milk is also demonstrated.

Small-Pox on Ship.—Fourteen hundred passengers on the North German Lloyd liner *Koln* were vaccinated and 189 were detained at the quarantine station at Marcus Hook, on July 12, as the result of the discovery of a case of small-pox. Twelve of those detained show symptoms of the disease. This ship docked on July 11, having sailed from Bremen June 28 with 1,400 cabin and steerage passengers. Though the case is serious, the quarantine physician does not anticipate a spread of the disease.

Personal.—Dr. and Mrs. Ralph Pemberton and Drs. Charles A. O'Reilly, Milton B. Hartzell, William M. Sweet and William Zentmayer have sailed for Europe.——Medical Director J. C. Byrnes, U. S. Navy, retired, has been appointed medical director of Jefferson Medical College Hospital.——Dr. Charles R. Leonard, chief of the Polyclinic Hospital staff is reported to be in serious condition from the over-use of the x-ray. It has already been necessary to amputate his hand and arm in the effort to check the spread of the disease.

RHODE ISLAND

New Officers.—Rhode Island Medicclegal Society at Pawtucket, July 3: president, Dr. Daniel S. Latham, Auburn; secretary, Dr. Carl R. Doten, Providence (reelected).

Personal.—Dr. Helen C. Putnam, Providence, has been elected vice-president of the department of child hygiene of the National Educational Association.——Dr. W. Louis Chapman, Providence, has been awarded the $200 prize offered by the trustees of the Fiske Fund, for his paper on "The Etiology, Pathology and Treatment of Phlebitis."

Resolutions Regarding Dr. Morgan.—At the meeting of the Westerly Physicians' Association, July 3, resolutions were unanimously adopted setting forth the sincere regret of the members of the association at the death of Dr. John Howard Morgan and tendering its sympathy to the family and friends. ——The Rhode Island Medicolegal Society at its annual meeting appointed a committee on resolutions regarding the death of Dr. Morgan.

TENNESSEE

Hospital Cornerstone Laid.—At the exercises incident to the laying of the cornerstone of the Galloway Memorial Hospital, Nashville, July 7, the principal address was delivered by Dr. John A. Witherspoon.

Sewanee Gives up Medical Department.—The Board of Regents of the University of the South, Sewanee, "regretfully relinquishes for the present, at least, the design of establishing a medical department in the city of Nashville." Resolutions containing this declaration have been adopted by the board of regents.

Personal.—R. F. Kitworth, Knoxville, has been appointed a member of the State Board of Osteopathic Examiners, vice Meyer Williams, Nashville, resigned.——Dr. Z. D. Massey, Sevierville, state prison physician, was operated on in St. Thomas' Hospital, Nashville, for appendicitis, and is reported to be improving.——Dr. J. G. Myer, Gallatin, has been elected a member of the staff of the Macon (Ga.) Hospital.

WEST VIRGINIA

Personal.—Dr. Harriet B. Jones, Wheeling, sailed for Europe, July 10.——Dr. W. C. Etzler has been appointed health officer and Dr. Marshner, assistant health officer of Wheeling.

State Board Appointments.—Dr. S. L. Jepson, for eleven years health officer of Wheeling and formerly secretary and president of the State Medical Association, has been appointed a member of the State Board of Health and will succeed Dr. H. A. Barbee as secretary. The other new members of the board are Drs. J. L. Pyle, Chester; J. H. Shipper, Gerrardstown; J. A. Rusmusell, Gassaway; W. J. Davidson, Parkersburg; H. A. Brandebury, Huntington; George P. Daniel, Marshes, and G. D. Ling, West Union.

GENERAL

District Society Meeting.—At the annual meeting of the Iowa and Illinois Central District Medical Association held at the Outing Club, Davenport, the following officers were elected: president, Dr. P. A. Bendixen, Davenport, Iowa; vice-president, Dr. F. H. Gardner, Moline, Ill.; secretary, Dr. L. W. Littig, Davenport, Iowa, and treasurer, Dr. F. H. First, Rock Island, Ill.

Tri-State Society Meeting.—The fortieth annual meeting of the Northern Tri-State Medical Society (Indiana, Ohio and Michigan) was held in South Bend, Ind., July 8. Dr. George

W. McCaskey, Fort Wayne, Ind., was elected president; Dr. T. F. Wood, Angola, Ind., vice-president; Dr. G. W. Spohn, Elkhart, Ind., secretary, and Dr. J. A. Weitz, Montpelier, O., treasurer. Kalamazoo was selected as the place of the winter's meeting.

Bequests and Donations.—The following bequests and donations have recently been announced:

Various German hospitals and charities of New York, $5,000 from the Hamburg-American Line, fees received from visitors who inspected the new steamer *Imperator*.

Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, one-half of a bequest of $20,000, one-half to be used for the establishment and maintenance of a free bed in the children's ward of that institution in memory of Sylvester Churchill, U. S. A., and one-half for a free bed in the nervous disease ward, in honor of Dr. John K. Mitchell.

Presbyterian Hospital, Baltimore, $50,000, benevolent fund of the Ladies' Aid Society of that institution and the Home of the Merciful Saviour for Crippled Children, each $5,000 by the will of Mrs. Jane McKee Norris.

Anticancer Fight.—The American Society for the Control of Cancer has nominated a committee of influential physicians to take up actively the national movement for the prevention of the spread of cancer. The executive committee of the society consists of Drs. Joseph C. Bloodgood and Thomas S. Cullen, Baltimore; Dr. LeRoy Brown, St. Paul, Minn.; Drs. George E. Brewer, Livingston Farrand, Howard Lilienthal, James Ewing, William E. Studdiford, Robert Abbe and D. B. Delevan, all of New York City; Dr. F. F. Simpson, Pittsburgh; Drs. A. D. Bevan and Frederick R. Green, Chicago; Dr. C. Jeff Miller, New Orleans; Dr. Charles A. Powers, Denver; Reuben Peterson, Ann Arbor, Mich.; Dr. W. T. Councilman, Boston; Dr. Edward J. Ill, Newark, and W. J. Mayo, Rochester, Minn. The chief aim of the committee is to educate the public on the symptomatology of cancer and the imperative need of early diagnosis and immediate remedial steps.

LONDON LETTER

(*From Our Regular Correspondent*)

LONDON, July 7, 1913.

The International Medical Congress

In consequence of the death of Sir Henry Swanzy of Dublin, president of the section of ophthalmology, Sir Anderson Critchett, one of the vice-presidents, has been appointed to the position. The following subjects will be discussed: "The Pathogenesis of Chronic Uveitis, excluding the Syphilitic, Tuberculous and Sympathetic Varieties," Fuchs (Vienna) and de Schweinitz (Philadelphia); "Glaucoma Operations, with Special Reference to the Comparative Results Obtained by Iridectomy and Its Recent Substitutes," Lagrange (Bordeaux), Priestley Smith (Birmingham) and Lieutenant-Colonel R. H. Elliot, I.M.S.; "Affections of the Eye Produced by Undue Exposure to Light," C. von Hess (Munich) and J. Herbert Parsons (London); "Anaphylaxis in its Relation to Ophthalmology," Dr. Morax (Paris) and Dr. von Szily (Freiburg).

The president of the section of neuropathology is Sir David Ferrier, F.R.S. Dr. J. Babinski of Paris, and Professor D. Rothmann of Berlin will open the discussion on the "Symptoms of Cerebellar Disease and their Significance." M. André Thomas, M. Mendelssohn, Dr. R. Bárány, and others will take part in the discussion. Dr. Bárány will give a demonstration of his method of investigating cases of cerebellar disease. Dejerine of Paris and Liepmann of Berlin will open the discussion on "Motor Aphasia, Anarthria and Apraxia." The discussion will be continued by M. Henri Claude, M. Ernest Dupré, M. Felix Rose, Dr. J. S. Collier, Dr. S. A. K. Wilson, M. V. Monokow, M. H. Gutzmann, M. Heveroch and others. A meeting will take place at the National Hospital, Queen's Square, the great hospital for nervous diseases in this country to which all our most celebrated neurologists are attached, and patients will be exhibited illustrating the various forms of family and hereditary diseases of the nervous system. There will also be an exhibition of pathologic specimens. Oppenheim of Berlin and Spiller of Philadelphia will open a discussion on the "Relations of the Myopathies." The discussion will be continued by M. Huet, M. Félix Rose, M. G. Etienne, Madame Long-Landry, M. Mendelssohn, Dr. Batten and others. A joint discussion will be held with the surgical section on the "Treatment of Tumors of the Brain and the Indications for Operation." It will be opened by Bruns (Hanover), Cushing (Harvard), von Eiselsberg (Vienna) and Dr. H. H. Tooth. These will be followed by M. Babinski, M. Henri Claude, M. J. Sicard, M. Jumentié, M. de Martel and others. Dr. F. W. Mott and Professor Nonne (Hamburg) will open a discussion on the "Nature of the Condition Termed 'Parasyphilis.'" The discussion will be continued by M. Dejerine, M. Babinski, M. J. Sicard, M. A. Leri, M. de Massary, M. Charpentier, M. Sezary, M. J. Tenel, M. G. Etienne, Dr. Henry Head, Dr. James McIntosh and others.

A Historical Medical Museum

At 54A Wigmore Street there has been established by Mr. Henry S. Wellcome a historical medical museum, the only institution of the kind in this country. It contains a large and interesting assortment of objects which Mr. Wellcome has been collecting for many years and will be open to visitors to the International Medical Congress. The museum has been formally opened by Dr. Norman Moore, president of the section of the history of medicine in the International Medical Congress, in the presence of a distinguished audience including the presidents of the College of Physicians and Surgeons. Every subject in connection with the history of medicine from its earliest beginnings among savages down to the present day is illustrated, including fetishes, amulets and charms used in Africa, Polynesia and other parts of the world. There is a large collection of Roman votive offerings excavated chiefly at the temple of Aesculapius on the Tiberine Island and at the temple of Maternity in Capua, and also modern votive offerings from Italy, Portugal and other countries. Surgical instruments of all ages, appliances such as ancient feeding-bottles and manacles used to restrain the insane are shown. Other objects are personal relics, among which are such articles as medicine chests that belonged to Nelson and Wellington, the first tooth-brush used in this country, letters and relics of Edward Jenner, instruments of torture, reproductions of ancient hospital wards and old apothecaries' shops. Numerous portraits of eminent physicians, and paintings relating to the history of medicine are on view. The history of the recent development of tropical medicine—our knowledge of plague, malaria, yellow fever, sleeping-sickness, pellagra and other tropical diseases—is illustrated by maps, charts and diagrams prepared under the direction of Dr. L. W. Sambon, whose researches into the etiology of pellagra have revolutionized our views. It will thus be seen that the museum is a most interesting addition to the International Congress. It is intended to form the nucleus of a permanent museum in London, but its ultimate location and custodians have not yet been determined.

British Hospitals

Sir William Osler presided at the annual conference of the British Hospitals' Association which took place at Oxford. In his presidential address he contrasted the methods of colonial and American hospitals with those of British hospitals. A special feature of the British system was the admirable quality of the smaller institutions, such as the county hospitals. As regards the voluntary system, his advice was: "Give it up, it is antiquated and it is not going to continue." They must make up their minds to accept the principle of taking pay in the general hospitals. There was not a general hospital in the United States or Canada which did not take all the money it could get from all classes of patients. A striking contrast between the American and British hospitals was the fact that in England everything was done for the poor, who were rich in hospital care and treatment, while nothing whatever was done for the rich, who were the most neglected people in the country. The experiences of the rich in this matter had alienated very largely the upper classes from the profession of science and medicine. Many nursing homes were admirable and up to date, but many were not, and not one could take care of a patient as well as the general hospital. Osler would like to see every general hospital with a private pavilion; they could be made to pay very well. The clinical laboratories and pathologic arrangements of British hospitals were not out of date, because they had never been in date. They were hopelessly behind the times. It was necessary for them to reform and to rearrange their ideas, because many of them were pig-headed, obstinate and hopelessly ignorant on this question. Osler recommended that a consultant student-doctor, not practicing generally, should be connected with every hospital, and suggested the adoption of the Continental system of postgraduate courses in connection with county hospitals. Every hospital should be a center for the medical profession, and no doubt that would be much promoted by the linking of the hospitals by the insurance scheme. If the general hospitals were alienated from the insurance doctor, a state service was the only alternative. They must make every insurance doctor feel that the hospital was the place to which he should go for advice and aid in special emergency.

The National Insurance Act

An amending bill has been introduced by Mr. Lloyd George to remedy certain defects which the working of the national insurance act has revealed, but only one concession has been made to the medical profession. Voluntary contributors will be excluded from medical benefit when their contribution exceeds $800 per annum. In the original act workers aged over 50 received reduced benefits, those over 60 still further reduced benefits, and over 65 insurance was possible only to the extent of subscriptions paid by the workers and their employers. All these distinctions are now removed. A medical research committee has been appointed, arrangements for which have been provided in the act. It includes Sir Clifford Allbutt, Dr. William Bulloch (bacteriologist), Dr. Matthew Hay (professor of forensic medicine and public health), Dr. F. G. Hopkins (reader in chemical physiology in the University of Cambridge) and Sir William Leishman (professor of pathology, Royal Army Medical College). The duty of the committee will be to formulate a plan for research into tuberculosis. The committee will also deal with the collection and publication of results. A sum of $185,000 per annum is provided for expenses. There will also be an advisory council which will consider the scheme promulgated by the committee and make criticisms and suggestions for seeing that adequate consideration is given to the different problems arising and the various kinds of research work going on in the different parts of this country and in foreign lands.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, June 27, 1913.

Vaccine Therapy of Whooping-Cough

An interesting paper by Drs. C. Nicolle and A. Conor was read recently before the Académie des Sciences on some attempts at vaccination of whooping-cough by inoculation of living cultures of Bordet's bacteria, which these doctors used during the epidemic which raged in Tunis last spring. These cultures on agar-potato-blood, made into an emulsion in physiologic solution of sodium chlorid, were kept at 46 C. (114.8 F.) for thirty minutes, which does not affect their vitality, then repeatedly washed and centrifuged so as finally to obtain a perfectly homogeneous emulsion of bacteria, isolated and deprived of all foreign substances. For use in vaccination, each drop of the emulsion (representing about 400 million bacteria) is diluted with 2 c.c. of physiologic salt solution. Because of the difficulty of intravenous inoculation of very young children, Drs. Nicolle and Conor inject it under the skin of the thigh, from 1 to 5 drops of emulsion each time. The inoculations are repeated every two or three days. The authors have observed no general or local reaction. Of 122 children treated thus, 18 have not been seen after the first inoculation. Of the remaining 104, there have been 37 cures (complete cessation of cough), or 35.37 per cent.; 40, or 38.46 per cent., improved (notable diminution of cough), and 27, or 25.96 per cent. remained stationary. In the cases of cure, improvement became manifest very rapidly, generally on the first or the second inoculation. The nightly coughing spells diminished in intensity and number. Out of the 37 cures, 29, or 78.38 per cent., occurred after from two to five inoculations, that is in from three to twelve days. In view of the often discouraging duration of whooping-cough, the results obtained by Dr. Nicolle and Dr. Conor are distinctly encouraging.

Increase of the Cost of the Medical Course

As I have already mentioned, the cost of the course leading to the degree of doctor of medicine has been increased from $275 (1,395 francs) to $328 (1,640 francs).

The Bouchard Prize

Professor Bouchard, president of the Association française pour l'étude du cancer, has given the association the sum of $1,000 (5,000 francs) to reward the authors of the best work on pathogenesis of cancer. According to the conditions of the gift, the prize will be awarded at the end of 1915. Only those will be considered who have presented papers on pathogenesis of cancer before the association from Feb. 15, 1913, to the end of July, 1915, and have published their papers in the bulletins of their sections. The papers will be considered by a committee of the association, and the members will vote in secret on the conclusions of the committee. In case of disagreement between the association and the committee the award of the prize may be postponed until the end of 1916, in which event the works presented to the association and published in its bulletins before that date will be allowed to compete. The prize may be divided.

Medical Examination of Chauffeurs

M. Bernard Augé, a member of the Chamber of Deputies, has just offered a bill providing that every applicant for a diploma as a chauffeur shall present a medical certificate attesting that he has (1) a good constitution, (2) normal sight, (3) normal hearing, (4) no organic lesion of the heart, pleura or kidneys liable to cause sudden fainting and (5) so far as it is possible to show, no neuropathic affection such as monomania, hysteria or epilepsy. M. Augé offers as the reason for his bill the belief that in a great number of cases of unexplained accidents, the health of the chauffeur is at fault.

Personal

The Société de psychothérapie, d'hypnologie et de psychologie, June 24, unveiled the bust of Dr. Dumontpallier in the hôtel des Sociétés savantes. Dr. Dumontpallier died fourteen years ago. He was secretary-general of the Société de biologie and president of the Société médicale des hôpitaux de Paris. He took part in the principal events which ushered in the renaissance of psychologic studies in France. He presided in 1889 over the first international congress of hypnotism at a time when it took courage to do so, and on July 20, 1891, he founded the Société d'hypnologie et de psychologie, of which he was appointed permanent president.

On the same day took place the unveiling of the monument erected in the court of the Hôtel-Dieu to the memory of the surgeon Guinard, who was assassinated two years ago almost on the same spot by an insane man.

On June 24 the Académie de médecine elected two foreign correspondents in the division of surgical pathology and operative medicine, Dr. William J. Mayo of Rochester, Minn., and Dr. Ackerman of Stockholm.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, June 21, 1913.

Death of Prof. Max Kassowitz

A few days ago, Kassowitz, the eminent specialist on diseases of children, died at the age of 71 years, after a very short illness. He had a brilliant career. He graduated at the age of 21, and soon his gifts as a clear thinker and keen observer enabled him to gain the esteem of his confrères and to build up an extensive practice. He was one of the first to point out the value of phosphorus-cod-liver-oil medication in rachitic conditions, and numerous publications dealing with the diseases of the ossification and the affections of the bones in infants appeared from his pen. He also studied the influence of syphilis, especially the hereditary forms, on children, and from his small "ambulatory" department came forth many original observations and papers pertaining to pediatrics. Kassowitz was also one of the earliest and most arduous leaders of the anti-alcohol movement in this country, and the rapid increase of total abstinence among medical men is in a high degree the result of his incessant efforts at convincing doctors of the harmfulness of this liquid. The antivaccination movement found in him one of its strongest opponents, and he lived to see the triumph of his ideas, as compulsory vaccination is practically now in force in Austria. The numerous pupils of Kassowitz have spread his thoughts over the country, and his death means a real loss to scientific life here.

The Problem of Ozena

At a recent meeting of the Vienna Gesellschaft der Aerzte, Dr. Hofer read a paper on the experiments conducted by him in the Serotherapeutic Institute of Vienna at a request of Dr. Perez, the ambassador of Argentina in Austria. Dr. Perez isolated a special bacillus some years ago from noses affected with ozena. Since this disease is fairly common here, the investigation has much interest for Austria. Dr. Hofer actually found that the assertions made regarding the existence of an ozena bacillus were justified. The micro-organism could be isolated from the secretions of ozena and could be grown on agar. When injected into guinea-pigs or rabbits, it caused a purulent discharge from the nose, with subsequent atrophy of the lower turbinated bone. The smell of the cultures, as well as that of the discharge from the nose of infected animals, was the same as is observed in persons suffering from ozena. Dr. Perez says that the disease is

transmitted by close contact and by the use of infected towels and handkerchiefs or by personal uncleanliness. The illness occurs often in several members of the same family, and starts often in early youth. In the discussion, it was pointed out that atrophy of the bone is primary, and the atrophy of the mucous membrane a secondary manifestation. All speakers agreed on the necessity of a general investigation, all over the world, of ozena cases. If the bacillus of Perez should be the actual etiologic factor, the hitherto so unsatisfactory treatment of this disease would undoubtedly become more hopeful, as a vaccine should do good service in this respect.

Abderhalden Refuses to Come to Vienna

Abderhalden, the young scientist of Halle, who has won so much renown by his researches into the physiology of metabolism, was asked to accept the post of chief of the Vienna Medical Chemical Institute, as Professor Ludwig had to resign his position owing to old age. Abderhalden found it unsatisfactory to come to Vienna, since the institute to be placed at his disposal is by no means equivalent to that which he now controls, and the new establishment will not be ready before two years. His refusal has caused profound regret in medical circles and serves once again as a warning to our officials, who do not yet understand that the best men want also the best means for their work. Economy applied at the wrong place—for that is the reason why the chemical institute has not been built yet—has resulted in a serious loss to the Vienna University.

Marriages

JOHN CHANDLER SHIRLEY, M.D., Huron, S. Dak., to Miss Mildred Edna Hoyman of Bowman, N. Dak., at Ramona, S. Dak., June 24.

GEORGE H. GRIMMELL, M.D., Colorado Springs, Colo., to Miss Bonnie Vaughan of Detroit, Mich., at Raton, N. Mex., recently.

FREDERIC B. M. CADY, M.D., Cambridge, Mass., to Miss Edith L. Mott of Morristown, N. J., at Bridgewater, Mass., June 19.

ROSS CLAIR SPEIR, M.D., Furman, Ala., to Miss Emma Parker of Prairie Point, Miss., at Birmingham, Ala., June 29.

ALBERT ALONZO PETERSON, M.D., Elizabeth, Pa., to Miss Christine Metcalf of Leechburg, Pa., at Pittsburgh, June 25.

CHARLES CURTIS WALLINGSFORD, M.D., Geneva, Neb., to Miss Mayme Elizabeth Larson of Sioux Falls, S. Dak., June 25.

ARNOLD FREDERICK PLANKERS, M.D., St. Paul, Minn., to Miss Marie Bernadette De Beaulieu of Chicago, June 28.

WILLIAM ARTHUR TOLAND, M.D., Pottstown, Pa., to Miss Harriet Catherine Kase of Danville, Pa., June 26.

WALTER LEONARD ALBIN, M.D., University Place, Neb., to Miss Anna Fay Hanson of Crete, Neb., June 26.

JOHN SHIVELY COUGHLAN, M.D., Berkeley Springs, W. Va., to Miss Mary Gootee of Bethel, Del., June 24.

ENOCH MARVIN MASON, M.D., Birmingham, Ala., to Miss Helen Steiner of Montgomery, Ala., July 15.

JAMES ROBERT MCCORD, M.D., Atlanta, Ga., to Miss Marion Crawford Roberts of Utica, N. Y., June 25.

COURTLAND BURGETT MEUSER, M.D., Oshland, Ohio, to Miss Naomi J. Holmes of Galion, Ohio, June 26.

WALTER C. MYERS, M.D., to Miss Georgia Newman, both of Savannah, Mo., at Troy, Kan., June 26.

MARION L. ROBEY, M.D., Maiden Rock, Wis., to Miss Matilda J. Anderson of Bay City, Wis., recently.

LAWRENCE EDWARD COEN, M.D., to Miss Emma Elizabeth Hines, both of Passaic, N. J., July 1.

RALPH GRAHAM, M.D, Monmouth, Ill., to Miss Ella Margaret Griffith, at Monmouth, June 25.

LAURELL LAVERGNE LUGAR, M.D., Mystic, Iowa, to Miss Edna Bracewell of Allerton, Iowa, July 2.

FRED B. KYGER, M.D., Kansas City, Mo., to Miss Lucile Hutcheson, at Kansas City, June 14.

JESSE THOMAS NUGENT, M.D., Tulip, Mo., to Miss Anna Harris, in Centralia, Mo., recently.

CABOT LULL, M.D., to Miss Dorothy Maude Eaves, both of Birmingham, Ala., June 25.

Deaths

Benjamin Lee, M.D. New York Medical College, New York City, 1856; one of the best known sanitary officials of the United States and for twenty-eight years an officer of the State Health Service of Pennsylvania; died at Point Pleasant, N. J., July 11, aged 79. Dr. Lee was a native of Norwich, Conn., received his preliminary education at the Academy of the Protestant Episcopal Church, Philadelphia, was graduated with the degree of A.B. from the University of Pennsylvania in 1852, receiving the Master's degree in 1855, and that of Ph.D. in 1878 from that institution. After two years of study abroad he returned to New York City and seven years later removed to Philadelphia. He was attending physician in the Department of Diseases of Women in Demilt Dispensary, New York, in 1859 and 1860 and professor of orthopedics in the Philadelphia Polyclinic and College for Graduates in Medicine in 1892 and 1893. He became assistant surgeon of the Twenty-Second Infantry, New York National Guard, in 1861, was promoted to surgeon in 1862 and served in that capacity and as acting brigade surgeon during the Civil War. In 1885 Dr. Lee was appointed a member of the Pennsylvania State Board of Health and was elected secretary of the board, continuing in that position until it was superseded by the Department of Health in 1905 when he became assistant to the Commissioner of Health of Pennsylvania. From 1893 to 1905 he was secretary of the State Quarantine Board and in 1889 supervised the sanitary and medical service in and about Johnstown after the flood. In the same year he was appointed United States commissioner for condemnation of land for quarantine purposes at the mouth of Delaware Bay, and in 1891 Governor Beaver appointed him a member of the quarantine commission to select a site for a new station on Delaware River or Bay. During 1898 and 1899 he served as health officer of the city and port of Philadelphia. He made frequent contributions to medical literature and his society membership included many medical and sanitary associations at home and abroad. He had served as president of the American Academy of Medicine, National Conference of State Boards of Health, American Public Health Association, American Orthopedic Association and Aid Association of the Philadelphia County Medical Society.

Alden M. Gardner, M.D. Missouri Medical College, St. Louis, 1877; formerly professor of nervous diseases and medical jurisprudence in Cooper Medical College, San Francisco, and superintendent of the Napa California State Hospital; physician in charge of the Gardner Sanitarium, Belmont, Cal.; died in that institution, June 28, from nervous breakdown, aged 63.

Will C. Washburn, M.D. Cincinnati College of Medicine and Surgery, 1897; a member of the Ohio State Medical Association; founder of the night schools of Cincinnati and of the Glenairy School for the Training of Defective Children; principal of the eleventh district public school of Cincinnati; died at his home, June 24, from nephritis, aged 61.

Durus Dennis Carter, M.D. Jefferson Medical College, 1868; a member of the Medical Society of Virginia; first president of the Shenandoah Valley Medical Society; a member of the Board of Health of Shenandoah County and county physician; died at his home in Woodstock, June 21, from acute nephritis, aged 66.

Hugh Scott, M.D. University of Edinburgh, Scotland, 1859; for twenty-six years a practitioner of Chicago and for four years a member of the Board of Health; said to have been one of the founders of the first training school for nurses in Chicago; died at his home in Fond du Lac, Wis., July 11, aged 81.

Charles Plummer Morrill, M.D. Georgetown University, Washington, D. C., 1866; a member of the Massachusetts Medical Society; a veteran of the Civil War; a member of the school committee of North Andover, Mass., for twenty-five years; died at his home in that place, June 27, aged 73.

Wallace B. Deffenbaugh, M.D. Starling Medical College, Columbus, Ohio, 1885; a fellow of the American Medical Association; professor of obstetrics in Ensworth Medical College, St. Joseph, Mo.; for two terms city physiciaan; died in his office, July 2, from cerebral hemorrhage, aged 53.

Solomon Lucius Wynne, M.D. Memphis (Tenn.) Medical College, 1860; a member of the Mississippi State Medical Association; surgeon in the Confederate service throughout the Civil War; health officer of Tate County, Miss.; died at his home in Senatobia, June 26, aged 90.

Louis C. Neele, M.D. Medical College of Virginia, Richmond, 1857; a practitioner of Saline County, Mo., since the close of the Civil War; died at his farm near Sweet Springs, Mo., June 25, from senility and a fracture of the forearm, the result of a fall, aged 82.

Pride Jones Thomas, M.D. University of Maryland, Baltimore, 1902; a member of the Medical Society of the State of North Carolina; assistant surgeon of the Atlantic Coast Line at Wilmington; died at his home, June 24, from valvular heart disease, aged 38.

Isidore Clarence Smullyan, M.D. Baltimore Medical College, 1901; for five years a practitioner of Salt Lake City, Utah; a member of the State Board of Medical Examiners; died in the Holy Cross Hospital, Salt Lake City, June 30, from nephritis, aged 35.

Samuel J. Waggaman, M.D. Washington University School of Medicine, Baltimore, 1869; one of the founders of the National College of Pharmacy; a Confederate veteran; died at his home in Washington, D. C., May 30, from arteriosclerosis, aged 69.

George Joseph Gorman, M.D. New York University, New York City, 1891; connected with the New York Board of Health for more than twenty years; died in his apartment in New York City, June 27, from cerebral hemorrhage, aged 59.

William Henry McFadden, M.D. Pennsylvania Medical College, Gettysburg, 1852; chief engineer of the Philadelphia Water Bureau and later connected with the Camden (N. J.) Gas Works; died at his home in Philadelphia, July 2, aged 85.

Charles George Bull, M.D. Bellevue Hospital Medical College, 1881; a fellow of the American Medical Association; a well known surgeon of Alameda, Cal.; died at Greeneville, Cal., June 21, from valvular heart disease, aged 54.

Orville L. Helwig, M.D. Kansas City Medical College, Kansas City, Mo., 1896; slipped and fell in a bathroom in his hospital in Garden City, Kan., June 22, sustaining injuries from which he died a few hours later, aged 44.

Samuel Herbert Britton, M.D. Western Reserve University, Cleveland, 1884; formerly a member of the American Medical Association; died at his home in Marion, Ohio, June 28, from nephritis, aged 53.

John W. Hemsted, M.D. University of Iowa, Iowa City, 1873; formerly mayor and a member of the school board of Carson, Iowa; died at the home of his daughter in Saskatoon, Sask., June 19, aged 65.

Sidney B. Johnson, M.D. University of Nashville, Tenn., 1857; a Confederate veteran and a resident of Bowling Green, Ky., since 1876; died at his home, June 23, from cerebral hemorrhage, aged 77.

John Fletcher, M.D. Michigan College of Medicine and Surgery, Detroit, 1897; formerly a member of the American Medical Association; died at his home in Kalamazoo, Mich., about June 24, aged 60.

Edward Parry, M.D. Medico-Chirurgical College of Philadelphia, 1903; formerly a member of the American Medical Association; died at his home in Camden, N. J., about June 15, aged 46.

Colin M. Robertson, M.D. Missouri Medical College, St. Louis, 1857; for more than half a century a practitioner of Menard County, Ill.; died at his home in Tallula, June 14, aged 92.

Frederick J. Nicholson, M.D. Hahnemann Medical College, 1907; of Walworth, Wis.; was instantly killed in an automobile accident near Lake Geneva, Wis., July 1, aged 29.

George S. Murphy, M.D. University of Southern California, Los Angeles, 1891; for twenty years a practitioner of San Diego, Cal.; died at his home, June 30, aged 58.

John W. Sanders, M.D. Medical College of Indiana, Indianapolis, 1883; at one time superintendent of health of Lawton, Ark.; died at his home in that city, June 28.

Jessee M. Armfield (license, Arkansas, 1903); a practitioner for thirty-nine years; died at his home in Mena, June 28, from malignant disease, aged 66.

Adam Rupin, M.D. Homeopathic Medical College of Missouri, St. Louis, 1878; died at his home in Topeka, Kan., July 1, from cerebral hemorrhage, aged 75.

Peter H. Van Vleck, M.D. Homeopathic Medical College of Missouri, St. Louis, 1865; died at his home in Sturgis, Mich., April 10, aged 75.

James R. Taylor, M.D. College of Physicians and Surgeons, Baltimore, 1881; died at his home in Marietta, Ohio, about June 27, aged 63.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

CONVICTIONS UNDER THE FOOD AND DRUGS ACT

DENTON'S HEALING BALSAM

In May, 1911, two seizures were made of three dozen packages and six dozen packages, respectively, of this article, shipped by Hall and Ruckel, New York City, to Detroit. The labels on the bottles and the circulars wrapped round the bottles made such claims as:

"Will cure coughs and colds, heals the lungs, inflammation on the lungs."
"Will cure the Phthisic, Lame Back, Gravel and Kidney complaints."
"It will cure flesh wounds . . . on man or beast."
"It prevents contagious diseases, it cures heaves . . ."

The chemists of the Bureau of Chemistry reported that their examination indicated that the stuff was simply Canada balsam. Misbranding was alleged because of the misleading and deceptive claims. As no claimant appeared for the property, both lots were condemned and ordered to be destroyed by the United States marshal.—[*Notices of Judgment Nos. 1464 and 1465. Issued May 22, 1912.*]

ALLAN'S COMPOUND EXTRACT OF DAMIANA

In 1910 the Allan-Pfeiffer Chemical Company, St. Louis, shipped from Missouri to Illinois a product labeled: "Allan's Compound Extract of Damiana, with Saw Palmetto, Alcohol 27½ per cent." Some of the claims made for this stuff were:

"The Great Sexual Tonic Nerve and Brain Remedy."
"For Lost Manhood . . . Weak Memory, Exhausted Vitality, Errors of Youth."

While the name and description of the preparation gave the purchaser the impression that it consisted essentially of extract of damiana with saw palmetto, the government chemists reported that "in fact it consisted of numerous other ingredients and substances." Moreover, although it was so labeled as to convey the impression that it was a sexual tonic and possessed aphrodisiac properties, it had, said the chemists, "no such properties." It was therefore declared misbranded on both counts. In March, 1912, the company pleaded guilty and was fined $10 and costs.—[*Notice of Judgment No. 1560. Issued Aug. 21, 1912.*]

HAMBURG STOMACH BITTERS

In May, 1912, the Weideman Co. of Cleveland was charged with shipping in 1910 from Ohio to Missouri a quantity of bitters which were misbranded. The product was labeled:

"Hamburg Stomach Bitters . . . 35 per cent. Alcoholic strength . . ."

A sample was analyzed by the Bureau of Chemistry and the chemists reported that the product "consisted of a sweetened water and alcoholic liquor flavored with a small amount of flavoring material and colored with caramel." Misbranding was alleged because of excess of alcohol above amount acknowledged on the label, and because the name "Hamburg," on the label, gave the impression that the stuff was of foreign manufacture, which it was not. The company pleaded *nolo contendere* and the court, while assessing fines in other, and simultaneous, cases of violation of the act, to which the company pleaded guilty, seems to have relieved them of any punishment for this offense.—[*Notice of Judgment No. 2094. Issued March 27, 1913.*]

DR. BENNETT'S WONDER OIL

In April, 1910, L. R. Bennett, who traded as the Bennett Medical Company, Norfolk, Va., shipped from Virginia to the

District of Columbia a quantity of Dr. Bennett's Wonder Oil. The claims made on the labels read:

"Good for rheumatism, neuralgia, headache, earache, dizziness, sprains, toothache, bruises, chilblains, cuts, frosted feet, burns, sore throat, pleurisy, colic pains, catarrh, deafness, cholera morbus, diarrhea, cramps, dysentery, scalds, etc."

Analysis by the federal chemists is reported to have shown that the article contained alcohol (46.3 per cent.), chloroform and morphin. Since the presence of none of these ingredients was declared on the label, although required by the Food and Drugs Act, the product was declared misbranded. In June, 1911, Bennett pleaded guilty and was fined $25 and costs.—[*Notice of Judgment No. 2106. Issued March 27, 1913.*]

PALE ORANGE BITTERS

In September, 1910, the Bettman-Johnson Company of Cincinnati shipped from Ohio to Texas a product labelled "Pale Orange Bitters," which was misbranded. The label read:

"A Wholesome Tonic. Superior Quality . . . These Bitters are guaranteed to be made under the most approved process of the best materials."

A sample was analyzed in the Bureau of Chemistry and the chemists reported that it contained "alcohol, by volume, 32 per cent., colored with caramel." Misbranding was alleged for the reason that no statement appeared on the label of the quantity or proportion of alcohol contained in the product. In November, 1912, the defendant entered a plea of *nolo contendere* and was fined $25 and $14.30 costs.—[*Notice of Judgment No. 2199. Issued April 16, 1913.*]

CASOID FLOUR—A CORRECTION

In an article by Mr. J. P. Street on "Diabetic Foods Offered for Sale in the United States" that appeared in THE JOURNAL, June 28, 1913, it was said that Casoid Flour contained 2.2 per cent. carbohydrates. Attention has been called to the fact that this statement is at variance with the description of Casoid Flour in New and Nonofficial Remedies, which declares that the product contains neither sugar nor starch. The matter was taken up with the Secretary of the Council on Pharmacy and Chemistry who in turn made inquiry of Mr. Street regarding the apparent discrepancy. At the same time a specimen of Casoid Flour was purchased in the open market and submitted to the chemists of the Association's laboratory for examination.

The Secretary of the Council on Pharmacy and Chemistry reports as follows regarding the correspondence with Mr. Street and the result of the laboratory's investigation:

"In reply, after explaining that in the full report soon to be published it will be made plain that Casoid Flour does not contain starch, Mr. Street continues:

. . . by the omission of some paragraphs that appear in the full report explanatory of my tables, some misconception might arise as to the true carbohydrate content of certain of the diabetic foods. In the full report I state that, for the sake of uniformity, the protein has been calculated by means of the conventional factor, 6.25, and that for this reason the protein percentages of the wheat products as given in the tables are too high, and those for nitrogen-free extract are correspondingly too low. I also say: "On the other hand in a preparation like Casoid Flour, consisting in large part of casein, the use of the proper factor 6.37, instead of 6.25, would increase the protein 1.64 per cent. and correspondingly decrease the carbohydrates. The use of the conventional factor in such a substance as this does it a slight injustice, as it is practically free from carbohydrates."

"Casoid Flour at the time of its acceptance for inclusion with New and Nonofficial Remedies (THE JOURNAL A. M. A., Nov. 2, 1912, p. 1622) was free from sugar and starch. Similarly, the product purchased in Chicago, July 7, 1913, when examined in the Association laboratory, was found to be free from starch and sugar."

Vital Statistics and Sanitary Administration.—Whenever statistics are wanting, sanitary administration is defective. Whenever they are complete, sanitary administration is efficient. Defective vital statistics and low ideals of cleanliness and health go hand in hand.—William H. Allen.

Correspondence

Unfair Demands on Physicians by Insurance Companies

To the Editor:—I wish to call attention to an injustice that, to my mind, is being imposed on physicians. The numerous health and accident companies insist on proof from the physician as to the disability of the insured, but they refuse to pay him for it, although it is manifestly for their protection, I presume that every physician is willing to furnish to the insured a simple statement, which can be dictated to a stenographer in a few minutes, as to the length and nature of the disability, but these companies insist on the physician's filling out answers to a long list of questions.

A few years ago the list was headed with the request, "the physician will *please* fill in the answers to the following questions." Emboldened by the complaisance of the physicians, most of these companies now head the blank with "the physician *must* furnish correct answers to the following questions," though the reason for the imperative *must* as coming from the company, is not apparent to the ordinary observer. If the company paid the physician for the information that is so manifestly for its protection, it might properly insist on the correct filling of its blank, but, until it does, it would seem that ordinary politeness would suggest the word "please" instead of "must." Formerly the company sent the blank around by the insured, but recently the agent of the company comes around with all the assurance in the world and demands that the physician spend thirty or forty minutes in properly filling out his blank. Some of these companies have inserted this question in their blank, "What was your treatment?" I have always answered this question as follows: "This question is impertinent and the answer is no concern of yours." No company has asked for any further information. When a physician is employed by the insured he is responsible to the insured only for treatment, and not to an insurance company that imposes on him enough by trying to get for nothing information for its protection. Some companies add insult to injury by requiring a sworn statement, so that the physician must not only take up his time by filling the long blank, but he must also hunt up an officer to swear him.

It speaks well for the integrity of physicians as a class that these companies have been able so long to get correct information for their protection at no cost to themselves.

CLIFFORD U. COLLINS, M.D., Peoria, Ill.

Vaccination for Autumnal Hay-Fever

To the Editor:—The hay-fever season being just at hand, I should like to urge physicians and sufferers to experiment with pollen vaccine and publish their results. Various suggestions in this line have been made but I have seen no definite and hopeful work till that editorially commented on in THE JOURNAL, June 7. A personal experience leads to this letter. Two years ago I collected some ragweed pollen and placed 1 dram in 1 ounce of glycerol (glycerin). After reading your editorial I gound the pollen and glycerol and filtered, washing the residue to make 2 ounces, and adding phenol (carbolic acid) to 0.5 per cent. My son being a hay-fever subject, I washed his arm with ether, placed a small platinum loopful of the vaccine on it and made a minute scratch not to exceed ⅛ inch through it with a similar scratch for control at a distance of 2 inches. The excess of reaction at the vaccinated spot was almost negligible. Three days later, to test the possibility of the increase of sensitiveness, the experiment was repeated in the same way. Within five minutes a weal was present ⅜ inch in diameter, and surrounded by a congested and infiltrated area 1½ inches in diameter and with the sharp sensation of a mosquito-bite. As a further control I asked my friend Dr. L. L. Ten Broeck to apply the test to my own arm. He did so but with from five to ten times the amount of scarification. The result

was absolutely nil. A test three days later was equally without result.

Making 1: 1,000 and 1: 1,000,000 dilutions it is perfectly easy to make and use this vaccine and with such beginning doses as are entirely safe. If the thousands of physicians who have hay-fever patients would take the comparatively little trouble of carrying out such a technic as I have described, or a better one, and make vaccinal injections as suggested in your editorial, great results might be secured in a single season in determining the value of such treatment. The pollen is ready.

EDWARD J. BROWN, M.D., Minneapolis.

Criticism of Editorial on Oxaluria

To the Editor:—I take exception to the statement in the editorial on "Oxaluria" in THE JOURNAL, June 21, 1913, p. 1959, that "we believe that it is a tenable conclusion to say that the only conspicuous significance of the oxalates at present is to be found in their tendency to form sediment or concretions." In my experience, numerous oxalate of lime crystals in the urine are accompanied by symptoms of headache, irritability, depression, lassitude, insomnia and dyspepsia. Not all may be present in every case, but one or more usually is. Insomnia that does not yield to the numerous hypnotics often yields to correction of oxaluria. At this season tomatoes, rhubarb and strawberries may cause oxaluria, and "tomato-joint" is a well-recognized clinical entity. Cure is effected by administration of the strong nitrohydrochloric acid, 7 drops after each meal in a full glass of water, taken through a glass tube and followed by an alkaline mouth-wash or tooth-powder to protect the enamel of the teeth.

P. G. SKILLERN, JR., M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FUNCTIONS OF THE PINEAL GLAND

To the Editor:—In THE JOURNAL, June 7, 1913, under Current Medical Literature, you give an abstract from *Beiträge zur klinischen Chirurgie*, Tübingen, for April, entitled "Zur Pathologie und Operabilität der Tumoren der Zirbeldrüse," by Rorschach and translated "Tumors of the Pineal Gland." As the symptoms of tumor of the pineal gland as given in the abstract are so like those, if I remember correctly, given by Dr. Cushing in lecturing on the pituitary body at the Harvard Medical School, it has occurred to me that the pituitary body might be the gland in question rather than the pineal gland. Unfortunately there is at hand no available dictionary of German medical terms in which to look up "Zirbeldrüse," so I cannot tell whether or not the translation has anything to do with the question.

As the pineal body or gland is treated in Starling's "Physiology" (Lea & Febiger, 1912 edition) as follows, it is very interesting if the article abstracted really refers to it. Starling says: "The pineal gland has, so far as we know, no function in metabolism. It is interesting as a vestigial remnant of a primitive dorsal eye. . . . It is doubtful whether at any time in the history of vertebrates the pineael eye has been functional." In view of this statement and Dr. Cushing's findings that overdevelopment of the skeleton and sexual characteristics and obesity are the two phases of overactivity and underactivity of the pituitary body, it seems as if the latter might be the subject of this article rather than the pineal gland. Kindly enlighten me on this matter.

HOWARD E. SETTLE, Berne, N. Y.

ANSWER.—As to the translation there is no question; the word *Zirbeldrüse* means pineal gland. The investigations of the functions of the pineal gland have yielded the following as probable: An interference with the metabolism of fat is often found in connection with pathologic states of the pineal body, the preponderance of evidence indicating that obesity is connected with a hypofunction of the gland. The changes due to disturbance of this function take place in young subjects, principally boys under 7 years of age and consist in abnormal tallness, unwonted growth of the hair, premature sexual and mental development and early maturity. These changes usually are associated with symptoms of brain tumor and seem to depend in most cases on a destructive lesion or growth of the pineal body.

It is evident that these changes are similar to those that have been observed in affections of the pituitary body.

OBLITERATION OF WRINKLES BY SUBCUTANEOUS INJECTIONS

To the Editor:—1. Kindly refer me to literature and publish formulas for subcutaneous injections to obliterate wrinkles. 2. What is the principal danger of this practice? 3. Given a case in which a man has received this treatment of the face and has had to have the face lanced twice and the area curetted owing to an increasing hard mass forming at site of injection, what is the diagnosis of the local condition present? 4. What animal fats are used and how are they prepared? E. N. H.

ANSWER.—This method is treated in various text-books on surgery. The method consists in the injection, under aseptic precautions, of melted paraffin, having a melting-point of from 41 to 44 C. or 105 to 110 F. Only enough should be injected to distend the tissue moderately. The following literature may be consulted:

Davis, A. E.: A Protest Against the Employment of Paraffin Injections Near the Eyes, THE JOURNAL, July 20, 1907, p. 215.
Smith, Harmon: Paraffin Injected Subcutaneously for the Correction of Nasal and Other Deformities, THE JOURNAL, Sept. 26, 1903, p. 773.
Roberts, John B., A.M., M.D.: Surgery of Deformities of the Face, published by William Wood & Co., New York.

2. If asepsis is imperfect the injected paraffin may act as a foreign body and produce an abscess. It may also cause the formation of a fibroma which has received the special name of paraffinoma. Embolism has occurred from some of the paraffin entering a blood-vessel. This has occasionally reached the eye producing blindness.

3. The local condition present, in the case described, is probably paraffinoma. Paraffinoma is a fibrous tumor produced in consequence of the irritation set up by the paraffin injected. The only effectual treatment is removal of the paraffin, and that is not altogether satisfactory because the paraffin is in threads and worm-like masses in the tissue and is difficult to dislodge. See the following:

Erythema Following Paraffin Injection, Queries and Minor Notes, THE JOURNAL, Nov. 16, 1912, p. 1812.
Heidingsfeld, M. L.: A Further Contribution to the Histopathology of Paraffin Prosthesis, THE JOURNAL, Dec. 12, 1908, p. 2028.
Pusey, W. A.: The Principles and Practice of Dermatology, p. 865.

4. Animal fats are not used in this method. Paraffin is a mixture of solid hydrocarbons and not a fat in the chemical sense.

THIALION

To the Editor:—Please give the formula of the much-lauded uric acid preparation "Thialion," manufactured by the Vass Chemical Company, Danbury, Conn.

E. TRIBLE GATEWOOD, M.D., Toano, Va.

ANSWER.—In the "literature" supplied to physicians and in advertisements in medical journals, Thialion was stated to be "a laxative salt of lithia" with the chemical formula "$3Li_2O.NaO.SO_3.7HO$," and the synonym "sodio-trilithic anhydrosulphate." An elaborate, impossible structural formula was also supplied. An investigation proved it to be a mixture consisting, approximately, of:

Sodium citrate	58.6
Sodium sulphate, anhydrous	26.6
Sodium chlorid	3.3
Lithium citrate, anhydrous	1.8
Water	9.7

The report of the Council on Pharmacy and Chemistry on this stuff appears in the seventh edition of "The Propaganda for Reform."

ARTICLES ON DISPENSARY ABUSE.

To the Editor:—Please give me a list of articles on dispensary abuse. MICHAEL M. DAVIS, JR., Boston.

ANSWER.—The following may be consulted:

Warner, A. R.: Dispensary Abuse and its Elimination by Organization and the Application of Sociologic Methods, THE JOURNAL, March 8, 1913, p. 739; Sources of Dispensary Abuse, *Cleveland Med. Jour.*, October, 1911.

Anders, Howard S.: Report of Committee on Hospital Dispensary Abuse, abstr., THE JOURNAL, Jan. 6, 1912, p. 59.
Foster, E. C.: Charities Clearing-House, in Its Relation to Dispensary and Hospital Abuse, *Cleveland Med. Jour.*, October, 1911.
Gerstenberger, H. J.: Dispensary Abuse, *Cleveland Med. Jour.*, October, 1911.
Herrick, F. C.: Dispensary Practice with Suggestions for Its Control, *Cleveland Med. Jour.*, October, 1911.
The Problems of Medical Charity, *Bull. Chicago Med. Soc.*, Nov. 26, 1910.
Gay, George W.: Abuse of Medical Charity, *Boston Med. and Surg. Jour.*, March 16, 1905.

SUGGESTION FOR USE OF SANITARY NAPKINS

To the Editor:—It has often occurred to me that if a properly shaped piece of rather heavy paper—a sanitary napkin, if you please—could be provided for the protection of one's person from contact with a water-closet seat it would be a welcome safeguard. These sanitary napkins could be regularly provided along with the toilet-paper and kept right by the seat, just as ordinary toilet-paper is.

Will you kindly make the suggestion to some maker of sanitary toilet paper? J. W. H.

ANSWER.—Some manufacturers of sanitary towels and toilet-paper are already supplying napkins such as our correspondent suggests. These are distributed by means of a slot machine.

IRRIGATION OF LOWER BOWEL IN TYPHOID

To the Editor:—Is the irrigation of the lower bowel for the reduction of temperature in typhoid fever, etc., good treatment? F. L. A.

ANSWER.—This method has been used to some extent, but we see no reason why it should be used in preference to the cold bath.

Irrigation of the lower bowel by cold enema is sometimes employed, and if the quantity of fluid used is not large there is no contra-indication to this procedure. It must be remembered, however, that cold enemas are complementary to some other forms of antipyretic treatment—spongings, packings or baths—and can seldom be depended on to control the temperature.

TREATMENT FOR LAMBLIA INTESTINALIS

To the Editor:—Kindly give me the proper treatment for *Cercomonas intestinalis* or *Lamblia intestinalis*.

GUY S. PEPPERS, M.D., Titusville, Fla.

ANSWER.—Castellani's methylene-blue treatment is said to give the best results. A dose of 0.13 gm. or 2 grains is given three times daily. At the same time enemas consisting of a solution of the drug, 1: 3,000, are administered. Care should be taken to avoid the transmission of the infection, and rest in bed with appropriate general treatment is essential.

LITERATURE ON MERCURY OXYCYANID

To the Editor:—Please give literature on oxycyanate of mercury, its composition, dosage, etc.

F. E. WHITNEY, M.D., Rochester, N. H.

ANSWER.—Our correspondent probably means mercury oxycyanid. This substance is described in N. N. R., p. 156. We also made reference to it in THE JOURNAL, Feb. 25, 1911, p. 609. Besides this we find no literature on the subject.

OPERATING DURING MENSTRUAL PERIOD

To the Editor:—Is menstruation a contra-indication to an operation for acute appendicitis within the first twenty-four hours; also, in other urgent operations of the abdominal cavity?

H. A. HOTTENDORF.

ANSWER.—No. In any case of urgency the presence of menstruation should not be regarded as a contra-indication to an operation.

PAPER MONEY AS A DISEASE CARRIER

To the Editor:—Is there any literature bearing on the subject of the possibility of the transference of disease through the medium of paper money? Do you know of any bacteriologic examinations having been made of ordinary circulating paper money? X. Y. Z.

ANSWER.—The subject was discussed in the *Popular Science Monthly*, August, 1908, by W. W. Hilditch, and again in the same journal by A. C. Morrison, January, 1910.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

THE NEW CALIFORNIA MEDICAL PRACTICE ACT

This law, which is to take the place of the present medical practice act of California, would seem to be the first measure of its kind providing for a single board, authorized to issue two grades of certificates. Apparently such a law should meet all the objections of the so-called "drugless healers," including even the Christian Scientists, for it is provided that "this act shall not be construed so as to discriminate against any . . . treatment, nor to regulate, prohibit, or apply to, any kind of treatment by prayer, nor to interfere in any way with the practice of religion."

The law creates and establishes a state board of medical examiners, consisting of ten members, appointed by the governor. Each appointee must establish a citizenship of at least five years' standing next preceding his appointment, and "each of the members shall be appointed from among persons who hold licenses under any of the medical practice acts of this state." Thus the membership can be made up from any school, or schools, that the governor may determine.

The board must hold at least one regular meeting a year in Sacramento, and at least two additional meetings annually, one each in Los Angeles and San Francisco.

Due notice of all these meetings, and of the examinations as well, must be published twice a week for two weeks next preceding such meeting, or examination, in some daily paper of each of the three cities mentioned.

All applications for examinations must be made through the secretary of the board, to whom the prescribed fee and the necessary credentials as well, must be sent.

The board must compile an annual directory, containing:

1. The names of all persons holding unrevoked licenses to practice in California, and residence.
2. The names of the medical schools each attended.
3. The date of licensure and the form of certificate issued to each practitioner.

This directory is to be made presumptive evidence of the right of any person to practice in California. The affirmative vote of seven members of the board is necessary to authorize the adoption of a rule or resolution and the issuance of a certificate to any applicant. Under this law three forms of certificates may in the discretion of the board be issued:

1. A "physician and surgeon" certificate. The holder thereof may use any method or system of treatment that the case may demand.
2. A "drugless practitioner" certificate. The holder is limited to the so-called drugless system of healing; he may sever the umbilical cord.
3. Reciprocity certificate, issued to applicants from a foreign state who are already licensed to practice as a physician and surgeon in their own state. The license permits them to practice as a physician and surgeon in California.

Applicants for either of the first two forms of certificates must advance a $25 fee; file satisfactory evidences of good moral character, and file a diploma showing attendance at and graduation from some approved medical school. An applicant for a physician and surgeon certificate must show an attendance of 128 weeks and credits amounting to not less than 4,800 hours; an applicant for a drugless practitioner certificate must show an attendance of sixty-four weeks and credits amounting to not less than 2,400 hours; prove a satisfactory preliminary school education; and after Jan. 1, 1919, an applicant for a physician and surgeon certificate must show at least one year of college work in physics, chemistry and biology prior to having commenced the study of medicine.

All applicants for certificates must submit to an examination in the usual fundamentals, it being provided, however, that applicants for a drugless practitioner certificate may be

excused from examination in materia medica, therapeutics, surgery and the like. If, however, the holder of a drugless practitioner certificate completes the course for the physician and surgeon certificate, he may be examined in the remaining subjects and receive the regular certificate.

A general average of 75 per cent. on the entire examination and not less than 60 per cent. in any two subjects is required for passing.

For each year of actual experience since graduation, any applicant will be granted 1 per cent. on his general average.

All certificates must state the extent and character of practice to be permitted thereunder.

Any medical director, inspector, passed assistant surgeon, or assistant surgeon of the United States Navy, and any similar medical official of the United States Army, who has been honorably discharged, ordered on detached service, placed on the retired list or has resigned under honorable circumstances can practice in California on submitting to the secretary of the board a copy of the order discharging him, etc., or proof thereof satisfactory to the board, with a fee of $50.

This provision does not apply to any contract surgeon in the Army or Navy, or to any similar physician or surgeon with the medical reserve corps.

It is mandatory on the board to issue a "physician and surgeon certificate" to any applicant without an examination, authorizing the holder to practice "medicine and surgery" in California, provided that such applicant was licensed to practice "medicine and surgery" in any state or territory of the United States or in the District of Columbia subsequent to the first day of August, 1901, and said applicant must show that the requirements, etc., in the state in which he was licensed were equal to those of California at the time the license was issued, else he must submit to an examination. The board can use its discretion in passing on the credentials of the applicant.

Any person may file an application to practice "medicine and surgery" in California who was licensed to practice and has practiced "medicine and surgery" in some state or territory or the District of Columbia prior to Aug. 1, 1901; but he must submit to an oral examination after having submitted proof as to his moral standing and mental ability and any other reasonable information the board may require. The board may make an investigation on its own initiative if such be deemed necessary.

No reciprocity certificate shall issue except on a majority vote of the board.

All applicants for a reciprocity certificate must advance a fee of $50, of which $40 will be returned on demand by the applicant if he be rejected.

All such certificates issued must be plainly marked across the face "Reciprocity Certificate."

It is mandatory on the board of medical examiners to refuse a certificate to any applicant charged with and found guilty of unprofessional conduct.

It is likewise mandatory on the board to use its discretion to suspend or revoke the license of any physician found guilty of a similar charge.

There may be a revocation of a license for fraud or mistake in its procurance, or for practicing contrary to the provisions of the law. A license may not be suspended to exceed one year, and during such period of suspension the licensee shall not practice. For a violation of this injunction a revocation shall be suffered, otherwise the license will revest at the expiration of the year.

Unprofessional conduct is defined as:

1. Procuring or aiding or abetting in procuring a criminal abortion.
2. Wilfully betraying a professional secret.
3. Advertising with intent to deceive credulous or ignorant persons and so be harmful or injurious to public morals or safety.
4. Advertising any medicine to regulate the monthly periods of women or to reestablish the menses if suppressed.
5. A conviction for any offense involving moral turpitude, in which case the record of such conviction shall be conclusive evidence.
6. Habitual intemperance.
7. Personating some other licensed practitioner.
8. Using a fictitious name or any other name than rightful name in advertising, etc., by the holder of a certificate.
9. Use, by the holder of a limited certificate, of drugs, or the performance of a surgical operation except the severance of the umbilical cord.
10. Advertising to cure venereal diseases or any sexual disease, or disorder by a firm, partnership, etc., or being in the employ of any one, etc., so advertising.
11. Use, by the holder of a limited certificate, of the letters "M.D." or words "doctor of medicine," or term "physician and surgeon," etc., in connection with his name, etc., on a card, etc.

The statute makes careful provision for the use of proper procedure in the trial of any one charged with unprofessional conduct. It is provided that due notice must be given the accused of the charge and of the day set for trial, and such person may be defaulted only if he fail to appear and defend, as the law prescribed and if the complaint on its face be sufficient. The board is given full power to subpoena witnesses, and hear testimony, either direct or by deposition; and its process is to be enforced by contempt proceedings in the superior court of the proper county.

No provision is made for an appeal from the judgment of the board; but the law provides that the register of the suspension or revocation kept by the county clerk of the proper county shall be prima-facie evidence as to such fact and as to the regularity of the proceedings. Thus, should an appeal be taken by any one deeming himself aggrieved, the burden of proof would rest with the appellant to establish facts sufficient to overturn the judgment of the board.

It is provided that licensees must record their certificates in the county or counties in which they intend to practice—a penalty being attached for a failure to do so.

Practicing without a license is a misdemeanor, and any person so doing is liable to a fine of from $100 to $600 or to imprisonment, etc.

Various other acts are constituted either a misdemeanor or a felony and proper punishment is provided.

Any person licensed under any previous law of California may practice under the present law without being licensed thereunder. But the holder of such a certificate shall be amenable to the present law in matters of revocation of license and the like.

The law makes the usual exemptions, such as the application of domestic remedies, a licensed physician from another state called in consultation, medical officer in the United States Army and the like. The act is not to be construed against any particular school; nor does it regulate, prohibit or apply to any kind of treatment by prayer, nor does it interfere in any way with the practice of any religion.

Medical Education and State Boards of Registration

The New Medical Department of the University of Georgia

Among the medical schools of the United States which in the past few years have undergone development special mention should be made of the medical department of the University of Georgia. Aside from its history showing it to be one of the oldest medical schools in the country, this school had very little to commend it at the time the Council on Medical Education made its first inspection in March, 1907. It held at that time only a contractual relationship with the University of Georgia, had no full-time teachers, held to a merely nominal standard of entrance requirements and had access to a very limited amount of clinical material. Stimulated by the reports on medical education from the Council on Medical Education and the Carnegie Foundation which came out in 1910, a decided trend toward improvement was begun. A lease was secured on a 45-acre tract of ground on which was located a large building

previously occupied as an orphan asylum. A campaign for financial support resulted in securing subscriptions from the citizens of Augusta amounting to $45,000 to be used for remodeling the orphan asylum building, which the medical college is now occupying, and for the purchase of additional laboratory equipment.

A contract was entered into with the city of Augusta providing for the erection of a new city hospital to be located on the campus of the medical school and providing that the medical school have entire control of the clinical facilities. It also provided for an appropriation of $10,000 per year in perpetuity for the medical school; this in addition to the amount necessary for maintaining the hospital. Another contract was entered into with the city whereby for ten years the medical school was given entire charge of the visiting nurses, city physicians, the sick poor of the city and the laboratory work of the city board of health, for the expense of which the city has made an additional annual appropriation of $11,500. Through these two contracts, therefore, all of the medical work of the city of Augusta has been placed under the charge of the faculty of the medical school, and the city pays the bills. The medical school not only controls the appointment of those who are to do the work, but also can systematize and make use of all the clinical material in the city. Meanwhile, this arrangement is unique in that the work of visiting nurses, city physicians, out-patient service, city board of health and city hospital is entirely removed from politics and placed in charge of what now has every promise of being a strong medical school. This will undoubtedly guarantee for the sick poor of Augusta and for the local health work the best possible attention.

After the local advantages mentioned above had been obtained, legislation was also secured making this school an organic department of the University of Georgia. The laboratories have been better equipped, additional laboratories have been opened, expert full-time teachers were carefully selected and placed in charge of all laboratory branches, the curriculum was strictly graded and a gradual increase in the entrance requirements was decided on. For the session of 1911-1912, fourteen units of high-school work were required, although students were allowed to enter with conditions. For the session of 1912-1913, fourteen units of high-school work without conditions were insisted on. The college has now announced that after Jan. 1, 1914, two years of work equal to that given in the freshman and sophomore years of the liberal arts department of the University of Georgia will be required, and a combined course has been arranged by the university whereby the degrees of B.S. and M.D. may be secured in six years. The college has also carefully systematized the clinical work of the students in the local dispensaries and hospitals. The medical library and the museum also are being rapidly developed. Following a thorough inspection, and in recognition of the improvements made, the college has been rated in Class A by the Council on Medical Education.

Better Knowledge of Cancer Desired

At the annual meeting of the American Association for Cancer Research, May 5, 1913, the following resolution (the report of the Committee on Statistics and Public Education) was unanimously adopted:

It is the sentiment of this association that: 1. The present instruction of medical students in the symptoms and early diagnosis of cancer is seriously deficient. 2. The medical curriculum should include special lectures in the clinical departments dealing specifically with this subject. 3. The universities should provide competent lecturers in this subject to address the local medical societies. 4. The associate members of the association should be urged to take up the question of the proper methods of approaching the public on the subject of cancer. 5. The activities of this association should at present be chiefly confined to the education of the medical profession. 6. This resolution shall be sent to the deans of the medical schools and the secretaries of the state medical societies in the United States and published in the medical press.

Adopt Higher Requirements

Howard University has announced that beginning with the session of 1914 the entrance requirements for its School of Medicine will be increased to two years of collegiate work including physics, chemistry, biology and a reading knowledge of one modern language besides English. There are now thirty-nine medical schools which already require at least two years of college work for admission or which have adopted that standard to take effect in the next one or two years.

The University of Tennessee Medical Department has announced that in 1914 and thereafter one year of college work, including courses in physics, chemistry, biology and a modern language will be required for admission. Including the colleges referred to in the preceding paragraphs there are eighty medical colleges which after 1914 will be requiring for entrance one or more years of college work including the sciences named.

Medicolegal

Construction and Constitutionality of Law Prohibiting Distribution of Samples of Medicine

(Ayers vs. State (Ind.), 99 N. E. R. 730)

The Supreme Court of Indiana affirms a judgment against the appellant (defendant) Ayers, who was convicted of unlawfully distributing and causing to be distributed samples of medicine from house to house. The court says that, coming to the statute, Section 1 (Section 2446 of Burns Indiana Statutes of 1908) and Section 2447, each will be found defining two separate and distinct offenses, in each case first prohibiting distribution from house to house of defined substances, and in each also prohibiting the giving away to children of those substances, medicinal preparations in one case, and in the other any deleterious substance, liquid or solid. Counsel for the appellant admitted that as to infants the offense is clearly defined in each case, but they argued that there could have been no reason for prohibiting handing samples of medicine to adults at their homes when the same substance may be handed them on the street. As to Section 2, it is quite clear that the distribution of any deleterious substance from house to house is forbidden, irrespective of the person who may receive it. The court can understand, also, that the taking of samples of medicines by adults, who do not understand the effects of certain medicines on the human system, or on different individuals afflicted with specific troubles, or the taking of medicine at all, without their prescription by qualified persons, may be very harmful, and it thinks it discovers in Section 1 a purpose in the legislature to prevent in some degree the absorption of medicine by those afflicted, or deeming themselves afflicted in a specific way, without regard to their possible effects, from the disposition of many who are afflicted to take anything which promises relief, or is recommended. Whether the act should have gone further, and forbidden the distribution of samples on the streets, was not material to this inquiry. The legislature has a very large measure of discretion in such matters. It also has a wide latitude in determining methods and expedients to accomplish the end of protection of public health. The court must assume that there were reasons in the mind of the legislature which prompted it to prohibit the distribution of medicine from house to house. If it had been deemed wise to except the distribution of medicines to adults at their homes, or distribution from house to house, there would hardly have been used the inclusive language which is employed in the act, and the fact that there is no exception may be considered in determining the intent, and construction to be given the act. The strong tendency of legislation in recent years is to require pure foods and medicines to be furnished, and, as to medicines, that they be administered by competent persons.

It was also urged that the act is invalid because in violation of the provision of the state constitution prohibiting the granting of "privileges and immunities which on the same terms shall not equally belong to all citizens"; but this

section cannot be invoked as against the exercise of a purely police power when it is applied alike to all who may be affected alike in its exercise.

Liability of Stepfather for Medical Services

(Monk vs. Hurlburt (Wis.), 138 N. W. R. 59)

The Supreme Court of Wisconsin affirms a judgment in favor of the plaintiff for medical services rendered to a stepson of the defendant. The court says that the defendant was a farmer and his stepson, named Murray, who was 17 years of age, while attending school in town, became ill. The plaintiff, a practicing physician and surgeon, was called by Murray's roommate to treat him. Nine years before that Murray's mother was divorced from his father. The decree of divorce gave the custody of the child to the mother, and ordered the father to pay to her $5 per month during the minority of the child for his support, but the father did not do it. Four years thereafter the defendant married Murray's mother, but Murray was never legally adopted by him. On the day after Murray became ill, he went to the home of a married sister in the town, and while he was there he was treated by the plaintiff. Shortly after he became ill, the defendant brought his mother to her daughter's home, and she remained there to nurse him. Later a necessary operation was performed. Supplies and medicines were procured from a drug-store and charged to the defendant. Several times during Murray's illness the defendant came from his farm to see him. During these visits he met the plaintiff, but did not direct him to care for Murray, or to perform the operation; nor did he object to such treatment of Murray by the plaintiff. When Murray had recovered sufficiently so that his mother's attendance was no longer necessary, she returned to the farm, and, when Murray was able, he also went there. While he was at the farm the plaintiff called to treat him, and Murray called at the plaintiff's office for treatment. It was contended that the facts and circumstances shown did not establish the defendant's liability for the professional services the plaintiff rendered for Murray, the defendant's stepson. But the jury found that the defendant stood in the position of a parent to his stepson; that the plaintiff had reasonable grounds for believing that this relation existed; that the defendant had assumed the obligations of providing the boy with necessaries; and that a special exigency as to the boy's health existed requiring medical and surgical treatment. It was manifest that the defendant was fully apprised of the boy's sick condition; that he understood such treatment was necessary; that he knew it was being furnished by the plaintiff; that he interposed no objection thereto; and that he so acted throughout the period of the boy's illness as to show approval of the plaintiff's course in rendering the services. Under this state of the facts, the defendant's liability for the value of the services rendered by the plaintiff was fully established within the principle that the law implies a promise where a parent with full knowledge of the facts and without objection allows and approves of his child being furnished with necessaries.

X-Ray Examinations under Statute Authorizing Physical Examinations

(State ex rel. Carter vs. Call (Fla.), 59 So. R. 789)

The Supreme Court of Florida holds that section 3151 of the General Statutes of that state of 1906, giving a trial court discretionary power, in a suit for damages for personal injury, to appoint a physician to make a physical examination of an injured party, is to be construed with due regard to the rights of the parties, and its scope is not to be extended beyond the terms of the statute. The physician appointed to conduct the examination should possess the skill and qualifications requisite to an intelligent performance of that duty. It seems to the court that under the authority of this statute a trial judge may, in the exercise of a sound discretion, on the motion of the defendant, appoint a physician, for the purposes indicated in the statute; that such physician must himself make the physical examination which the statute authorizes; that, while he may use the x-ray in his examination, he has no authority to take x-ray photographs of the person of the party examined without his or her consent; and much less has he the authority to appoint an outside photographer to use the x-ray, or to take such photographs.

From the pleadings before the court it appeared that the judge, acting on two reports, made to him by the physician appointed to examine the plaintiff, to the effect that she had refused to permit him to make an x-ray examination of her person, continued the cause. This ruling was proper, if as a matter of fact the plaintiff did refuse to permit such physician to make such x-ray examination; but the physician appointed by the court had no authority to make himself or to have a photograph made by another, without the consent of the plaintiff. The judge's refusal to permit the trial of the case until the plaintiff did permit such effectual examination to be made would continue to be proper.

A petition for rehearing suggested that it was impracticable for the physician appointed by the court under the statute to make the physical examination of the plaintiff in the action to recover damages for personal injuries without the use of an x-ray machine and the assistance of an expert radiologist to operate the machine and make the plate under the instructions of the examining physician, and that, as the person to be examined refused to submit to a physical examination in the presence of any other person and the appointed physician except such person as she might select, the court was asked to so construe the statute to allow the examining physician to have with him at the physical examination such assistance as he thought to be necessary to a proper examination. But the statute is the only authority for making a physical examination of a person who is suing for personal injuries. Under this authority, which is the sole guide in the matter, if the injured party objects to the presence of other persons than the appointed physician at the physical examination, and the appointed physician cannot make a proper physical examination of the injured party without other persons to assist him, it is within the discretion of the trial court to appoint another physician, who can make the examination as contemplated by the statute; but that court is without authority to compel the presence of another than the physician appointed by him.

Charitable Hospitals Not Liable for Negligence of Nurses

(Duncan vs. Nebraska Sanitarium Benevolent Association (Neb.), 137 N. W. R. 1120)

The Supreme Court of Nebraska says that it is a well-established doctrine that a charitable institution conducting a hospital solely for philanthropic and benevolent purposes is not liable to inmates for the negligence of nurses. Some courts say that one accepting the benefits of such a charity exempts his benefactor from liability for the negligent acts of servants. Others assert that non-liability is based on the ground that trust funds created for benevolent purposes should not be diverted therefrom to pay damages arising from the torts of servants. Exemption from liability is frequently sanctioned on the ground that public policy encourages the support and maintenance of charitable institutions and protects their funds from the maw of litigation. While there is a diversity of opinion as to the reasons for the rule, the doctrine itself is firmly established.

Nor does a charitable institution conducting a hospital by accepting compensation from a patient who is able to pay for room, board and care incur liability to such patient for the negligence of nurses. Money accepted from patients who are able to pay it does not go to persons who may be trustees, directors, founders, or incorporators of the institution, and is not a source of pecuniary gain to private individuals, but is devoted to the general purposes of the charity.

Consequently a charitable institution conducting a hospital for benevolent purposes alone does not necessarily incur liability in damages for the death of an insane patient who committed suicide when alone in a room, though pay for the patient's room and care was accepted under an oral agreement to keep a nurse in constant attendance.

Society Proceedings

COMING MEETINGS

Electro-Therapeutic Association, New York, Sept. 2-4.
Kentucky State Medical Association, Bowling Green, Sept. 2-4.
Michigan State Medical Society, Flint, Sept. 5-6.
Ohio State Medical Association, Cedar Point, Sept. 2-4.

CONNECTICUT STATE MEDICAL SOCIETY

One Hundred and Twenty-First Annual Meeting, held at Hartford, May 21-22, 1913

Officers Elected

The following officers were elected for the ensuing year: president, Dr. D. Chester Brown, Danbury; vice-presidents, Dr. W. M. Hulbert, Stanford, and Dr. Kate C. Mead, Middletown; secretary, Dr. M. M. Scarbrough, New Haven; treasurer, Dr. Joseph H. Townsend, New Haven.

The next annual meeting will be held in New Haven, May 20, 1914.

Clinical Significance of Vertigo

DR. CHARLES A. MCKENDREE, Cromwell: Vertigo includes many degrees, from mere discomfort to manifestations of severe disturbance reported to consciousness from labyrinthian, ocular and static sources. In vertigo it is important to find out the exact nature of the sensation experienced by the patient. Sea-sickness and train-sickness represent a form of vertigo in which the ocular and auditory nerves participate. Vertigo from vascular degeneration is very common. It is often seen in organic brain disease. In lesions of the pons and cerebellum, vertigo should be regarded as an important symptom. Vertigo in neurotic subjects is especially worthy of attention. No physician is justified in diagnosing a functional nervous disorder without first having eliminated every physical element, and he should not call vertigo neurotic without having first eliminated all the possible contributing factors.

DISCUSSION

DR. CHARLES N. HASKELL, Bridgeport: When we suspect the presence of brain-tumor, the first thing to think of is vertigo. We should all be cognizant of the ordinary causes of vertigo, such as the reflex causes, like neurasthenia, epigastric ptosis, etc.

DR. HENRY L. SWAIN, New Haven: Vertigo is an exceedingly interesting and contradictory sort of symptom, and is an indication of many general diseases of the most varied types. The objective symptom of vertigo, nystagmus, is most significant of the connection between the two important functions of sight and equilibrium. Marked vertigo, by the conditions inherent in arteriosclerosis, occurs with increased blood-pressure; and the simple rotative test for ear-disease will sometimes throw to the floor a big, strong man whose blood-pressure is below normal. When vertigo is associated with a purulent middle-ear process, it becomes a matter of extreme importance. If simple measures do not remove this danger signal, surgery must be employed in order to avoid the danger of meningitis. In some forms of dizziness, small doses of quinin, with bromid or hydrobromic acid, will work wonders. In others we must use some preparation of ergot. In one class of cases strychnin should be employed, and in another, pilocarpin. Again, strong glasses may remove all trouble; while in a simple case a good calomel purge is useful.

DR. FRANK K. HALLOCK, Cromwell: It is hardly possible to formulate a satisfactory anatomic basis for the production of all kinds of vertigo. The act of equilibrium or maintenance of the body balance is one of the primary, fundamental attributes of the organism. To understand the clinical significance of vertigo we must formulate some sort of idea of its mechanism. I should divide the symptoms into the following varieties: (1) the vertigo which results from an organic or fundamental disturbance of the organs of the nervous system which have directly to do with the act of equilibrium; (2) the conditions, for example, secondary to blood and vascular conditions, disordered functions, etc.; (3) those cases which are due to transitory physiologic disturbances, and (4) the psychic class. In all attacks of vertigo the state of consciousness is a great factor. The power of peripheral stimuli to cause vertigo depends on the particular state of the cortical centers representing the basis of consciousness. If consciousness is preoccupied or is in a strong and stable condition, the peripheral stimuli may make little impression in bringing about the concept and feeling of dizziness. We may infer also that the individuals who are especially susceptible to vertigo have a sensitive and responsive equilibratory apparatus.

DR. DORLAND SMITH, Bridgeport: If the vertigo is aural in origin, nystagmus accompanies it. If there is no nystagmus, the vertigo is not due to the ear.

DR. E. TERRY SMITH, Hartford: A slight paralysis of the extrinsic muscles of the eye and a slight disturbance in the middle ear affecting the pressure in the internal ear are the two most frequent causes of vertigo.

Work of the Infant Welfare Association of New Haven

DR. JOSEPH I. LINDE, New Haven: In 1912 the Pure Milk Committee withdrew from the Consumers' League and formed the Infant Welfare Association. The system of dispensing milk was very expensive, had no educative value, and produced moral weakening by relieving the parents of moral responsibility. All they had to do was to give the babies the milk already prepared. Now we are putting the work on the mothers by teaching them to prepare the milk, and it is wonderful to see how they have responded to this teaching. The Visiting Nurses' Association supplies the nurses, and four stations have been established. The nurse assigned to each station holds weekly conferences with the mothers, who bring their babies to be weighed and to be examined by the doctor in charge. The formula is then changed, if necessary. Sick babies are referred back to their own physician.

At the first visit the mother receives a lesson in the laboratory in making modifications of milk. The next day the nurse visits her at her home, in order to see that this work is properly done. Materials are supplied at cost. When milk is delivered at the home it is insisted that it be from a dairy whose name is endorsed by the New Haven Medical Society. By the end of the summer prenatal instruction was begun.

DISCUSSION

DR. JULIA E. TEELE, New Haven: The majority of mothers can be taught. This training is educational, not only in the way of mixing the milk for the baby, but also in the way of general cleanliness. At our conferences we give instruction in feeding the baby, and on general hygiene. The mothers are also taught about the bathing and clothing of the infants, and the care of the home. Our work is also kept up during the winter, when we do not supply the milk. I want to lay emphasis on the development of prenatal work. A nurse should visit the prospective mother and give her advice as to the care of herself and the coming baby.

DR. MERRIMAN STEELE, New Haven: At the beginning of our work in New Haven to furnish babies a clean, wholesome milk, I was absolutely convinced of the necessity of station-made modifications and mixtures, but I am glad to say that under the guidance of Miss Gilbert and her able, enthusiastic assistants, a clean milk was made possible in a tenement, where the only thing clean was the milk and the utensils used in its preparation.

DR. KATE C. MEAD, Middletown: In Middletown our nurses are not trained, but practical. We have been able to run our station only for three months of the year; but even so, we have cut down the death-rate of babies one-half. The babies saved in the summer often die in the winter of pneumonia, because we cannot yet afford to have nurses call to look after them during the winter.

DR. FRANK W. WRIGHT, New Haven: The mother who feeds the baby is the one who needs education. Our nurses teach

the mothers how to prepare the milk for their babies. We refer the sick babies to the Welfare Station.

DR. ARTHUR S. BRACKETT, Bristol: It is neither necessary nor right that a few persons should stand the expense of all this work. It should be put to the state that the schools ought to be used as teaching centers. Lectures along these lines could be given in the schools at night. There is no one so easy to teach about babies as the girls from 8 to 10 years old. They will take an active interest in the subject if instructed with regard to it.

Pseudo-Ileus Due to Intestinal Nerve-Impulse Disturbances

DR. PATRICK J. CASSIDY, Norwich: Enterospasm is a neurosis of the intestines associated with affections attending a general neurotic condition. The symptoms of an attack may vary from simple constipation with pain and distention to the most pronounced symptoms of complete mechanical obstruction. The attacks are usually recurrent, though death may occur during the first onset. Operative interference is advisable, although it is of benefit only from the point of view of diagnosis. A positive diagnosis is beneficial to the patient, who may be cautioned as to the best means of preventing the frequency of future attacks; but it is very difficult to make a positive diagnosis, except postoperatively or post mortem. The patients are increasing in number and this disease should be given more thought.

DISCUSSION

DR. JOSEPH M. FLINT, New Haven: It would be unfortunate for us to allow the possibility of the existence of enterospasm to delay in any way the operative treatment of cases of obstruction, owing to the mimicry by this pseudo-ileus of the true type. Medical men are more liable to see these patients than are those in the hospitals. We have had two cases; one, high in the ileum, and one in the transverse colon.

DR. OLIVER C. SMITH, Hartford: In 3,000 laparotomies, the only cases in which we have found pseudo-adynamic ileus have been explicable on some general anatomic ground. We have found a condition of angioneurotic edema in five cases in which the symptoms of intestinal stasis were so persistent that we were obliged to open the abdominal cavity. There is a tendency on the part of the physician to err on the side of conservatism is cases of intestinal obstruction.

DR. JOHN W. CHURCHMAN, New Haven: In one patient we had an opportunity to see the actual lesion. During operation, the small intestine became completely obstructed by a sharp and definitely localized spasm of the ileum. This caused a tumor mass which could be picked up and handled. It made the diagnosis absolutely positive. A cure was brought about by the administration of large doses of belladonna.

DR. ERNEST H. ARNOLD, New Haven: We constantly meet spasm of the stomach in tuberculous lesions of the dorsal region of the spine. The tumor formation associated with the spread of large abscesses, which may be in the intestine or abdomen, will press forward and bring about such pressure as to cause these spasms. In cases of repeated attacks, in which operation fails to relieve the condition, the spine should be subjected to a careful roentgenoscopy.

Cancer in African Negroes.—B. Huguenin reviews the statistics that have been published to date on the relative frequency of cancer in the dark-skinned races and describes several cases of cancer in negroes in Western Africa. He has compiled a total of sixteen cases, including eight sarcomas and one melanoma. According to the experience of F. and A. Plehn, Schehaye and Tröndle the proportion of cancers among their African negro tumor patients was 0.03, 0.05, 0.15 and 0.33 per cent. The proportion of cancers to other tumors during 1911 in Huguenin's service at Geneva, Switzerland, was 104 to 1,851, or 5.18 per cent. His article on the subject was read at the recent international congress on comparative pathology and was published in the *Schweizerische Rundschau*, 1913, xiii, 529.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, New York

June, III, No. 6, pp. 513-614

1 Sewage Treatment vs. Sewage Purification. G. C. Whipple, Cambridge, Mass.
2 Chemical Measure of Stream Pollution and Specifications for Sewage Effluents. E. B. Phelps, Washington, D. C.
3 Skilled Supervision of Sewage Purification Works. F. H. Snow, Harrisburgh, Pa.
4 Sludge Problem. L. Pearse, Chicago.
5 Formation of Hydrogen Sulphid in Sewage. A. Lederer, Chicago.
6 Practical and Just Legislation Relating to Stream Pollution. C. Saville, New York.
7 Approved Technic of Rideal-Walker Test. S. Rideal and J. T. A. Walker.
8 Standardization of Disinfectants. H. C. Hamilton and T. Ohno, Detroit, Mich.
9 *Bacillus of Whooping-Cough and Lesion It Produces. F. B. Mallory, Boston.

9. Bacillus of Whooping-Cough.—Last summer, while going over the necropsy report from a case of whooping-cough microscopically Mallory made the observation that between the cilia lining the trachea there seemed to be innumerable minute organisms present. The organism is exceedingly minute and looks a good deal like the influenza bacillus, but it does not require hemoglobin in order to grow. On the other hand the only medium on which it is possible to start it multiplying is a potato-blood-agar mixture devised by Bordet. The bacillus grows very slowly at first and forms minute transparent colonies which in time enlarge and acquire a slight brownish color, but not very much. After a certain amount of artificial cultivation it can be grown to some extent on other mediums. The bacillus is Gram-negative, nonmotile and varies in shape from round to oval. The bacilli seem to act mechanically only. They interfere with the action of the cilia and thus furnish a continuous irritation which excites coughing of a spasmodic type. Finally the coughing, which is not able to remove the organisms, is followed by a violent intake of air, the whoop. Examination of some lung tissue preserved from a case of whooping-cough, which came to autopsy fifteen years ago, showed masses of similar organisms in the same characteristic position between the cilia of the epithelial cells lining the bronchi. Mallory studied lung tissue from two other cases of whooping-cough, and in both of them the same lesion was found. The organisms occur only between the cilia and occasionally free in the secretion. They were never found within the air sacs. While the action of the organism is chiefly mechanical, it evidently secretes a certain amount of toxin. This is shown in three ways. There is a slight inflammatory reaction. Leukocytes in small numbers migrate through the wall of the trachea. The blood of whooping-cough patients always shows a certain degree of lymphocytosis. Finally the blood-serum develops an antibody which renders it possible to obtain a complement fixation test. The finding of these lesions in human beings naturally suggested experimental work on animals. Mallory first inoculated sputum obtained from acute cases of whooping-cough into the trachea of a puppy and also into that of a rabbit. In both instances he obtained a lesion corresponding in every way to that found in human beings. The easiest way to inoculate an animal with the organism was to make a suspension in bouillon and then pour it gently, a drop at a time, into the animal's nostrils. In this way it was compelled to inhale more or less of the culture. He was able in this way to duplicate in puppies and rabbits the lesions which he had found in the human cases.

American Journal of Diseases of Children, Chicago

July, VI, No. 1, pp. 1-64

10 Three Types of Occlusion of Esophagus in Early Life. T. M. Rotch, Boston.
11 *Influence of Activity on Metabolism of Child. A. Schlossmann and P. H. Murschhauser, Dusseldorf, Germany.
12 *Is Diphtheria Frequently a Bacteriemia? M. Nicoll and H. L. Wilcox, New York.

13 Simple Syringe Transfusion with Special Cannulas. E. Lindeman, New York.
14 Formula for Determination of Surface Area of Infants. J. Howland, Baltimore, and R. T. Dana, New York.

11. **Influence of Activity on Metabolism of Child.**—The authors' procedure is, as a rule, that the child last receives nourishment at 7 o'clock in the evening, then in the morning, and all the next day it has water and saccharin and is petted a great deal. Older infants are played with and as far as possible kept happy, so that they soon go to sleep after having been put in the apparatus; or they are allowed to go to sleep beforehand and the experiment is begun with the sleeping child. Generally, they begin the experiment at 7 o'clock in the evening; the child has then fasted for twenty-four hours, and the effect of nourishment on the organism is eliminated. If the child sleeps quietly in the apparatus for some hours, the experiment may be considered as an excellent one; absolute physical rest in a fasting condition. The value of the excretion of CO_2 and the consumption of O, which they have ascertained in this manner, gives a glimpse of the fundamental transformation of the infant. Fundamental transformation is the transformation of a person, reposing and fasting, who finds himself in comfortable, warm surroundings.

12. **Is Diphtheria Frequently a Bacteriemia?**—The authors conclude that diphtheria bacilli may occasionally gain access to the blood and be excreted in the urine in very severe cases of diphtheria with marked ulceration of the mucous membrane of the pharynx and tonsils. They believe that identification of diphtheria bacilli in the urine should not rest on morphologic characteristics alone, but be confirmed by isolation and animal inoculation controlled by the use of diphtheria antitoxin.

Annals of Surgery, Philadelphia

June, LVII, No. 6, pp. 785-970

15 *Lymphangioplasty: Handley's Method. P. Syms, New York.
16 Interscapulothoracic Amputation of Shoulder. N. B. Carson, St. Louis.
17 *Solitary Cysts of Liver; Report of Case. H. Norris, Rutherfordton, N. C.
18 *Gas Cysts of Intestine. P. R. Turnure, New York.
19 Etiology of Kidney Cysts. J. R. Caulk, St. Louis.
20 *Experimental Study of Several Methods of Suturing Kidney. J. E. Moore and J. F. Corbett, Minneapolis, Minn.
21 *"Dumb-Bell" Kidney. J. L. Herman and G. Fetterolf, Philadelphia.
22 Traumatic Hydronephrosis. W. E. Drennen, Birmingham, Ala.
23 Cause of Pain in Pyelography with Report of Accident and Experimental Findings. C. E. Tennant, Denver, Colo.
24 Case of Primary Tuberculosis of Glans Penis. E. A. Babler, St. Louis.
25 *Formation of Bone in Human Penis: Report of Case. A. G. Gerster and F. S. Mandlebaum, New York.
26 Anterior Gastro-Enterostomy. D. C. Balfour, Rochester, Minn.

15. **Lymphangioplasty.**—In going over the literature Syms finds that the Handley operation has been performed in twenty cases for brawny arm; in seventeen cases for elephantiasis; in three cases of chronic edema of the leg; in three cases of solid edema of the face and eyelids, and in ten cases of ascites. This does not include a number of cases reported as having been operated on, but in which no details are given. Syms has employed the operation in two cases, one of brawny arm following cancer of the breast, and one of ascites due to cirrhosis of the liver, both failures. In summing up the findings of reported cases of the application of lymphangioplasty in various conditions, the results have been as follows: Brawny arm, 20 cases, with 9 successes and 9 failures, and 2 cases with no report as to swelling. Elephantiasis, 17 cases, with practically 17 failures. Chronic edema of the leg (not elephantiasis), 3 cases, with 3 successes. Chronic edema of the face and eyelids, 3 cases, with 3 successes. Ascites, 10 cases, with success in 5 and with partial success or failure in 5.

17. **Solitary Cysts of Liver.**—None of the cyst wall in this case was excised by Norris, but examination of the fluid removed was entirely negative. It was slightly cloudy, alkaline, specific gravity 1,005, and contained albumin. Microscopic examination showed nothing whatever save cellular detritus.

18. **Gas Cysts of Intestine.**—Concluding from reported cases, and from the examination of his own pathologic specimen in which obliteration of the cysts can be seen in many areas, Turnure says the condition is self-limiting, with a tendency to spontaneous cure. Therefore, if the prediposing cause be treated, there is no indication for resection of the affected bowel or even an attempt at removal of the cysts. The chief characteristics of the lesions are: 1. Extensive gas cyst formation, for the most part situated outside of the longitudinal muscular coat. 2. Characteristic appearances of the gas cysts and the cyst walls, in which the presence of an endothelial-like lining and giant-cells is a feature. 3. Occurrence of spaces or channels, some of which may be lymphatics partly lined by endothelium and partly filled with giant-cells, endotheliod cells, and leukocytes. 4. Evidences of dilatation of lymphatics and of the inter-communication of large lymphatic spaces, possibly cyst spaces with undoubted lymph-channels. 5. Absence of communication between cysts. 6. Inflammatory and productive processes between the cysts and under the peritoneum, resulting in the formation of connective tissue and fibromatous masses, leading to the obliteration of certain cysts and therefore to a kind of healing process. 7. Absence of bacteria in most of the cysts. (The bacteria present in some places are probably post-mortem invaders.) 8. The deposition of highly refractive needles in the interior of many of the cysts, causing a peculiar flattening of the cells belonging to the lining membrane, and the possible rôle of such crystalline matter in the production of some of the giant-cells.

20. **Suturing of Kidney.**—The authors summarize their study as follows: Mattress sutures cause extensive destruction of kidney substance. Silver wire with mattress sutures causes a variable amount of damage. Simple incision with over-and-over sutures does not produce serious lesions. The serrefine method produces slight lesions. While this is not free from infarction, the only legacy left is a slight loss of parenchyma without other complication.

21. **"Dumb-Bell" Kidney.**—The specimen described by Herman and Fetterolf was found while attempting to remove the kidney through a lumbar incision, which they were unable to do. After complete exposure of the kidney through the left loin, the cause of the impossibility of delivery was found to be due to a congenital abnormality, the main feature of which was a continuity of the renal tissue of one side with that of the other across the spinal column. This could be determined readily by means of a finger passed along the dorsal surface of the renal tissue. In freeing the kidney a large renal artery from the left common iliac to the left lower pole was torn away in the supposition that they were dealing with a perirenal adhesion, an unlikely mistake in the living, in the presence of pulsation.

25. **Formation of Bone in Human Penis.**—The authors' patient, a male, was 49 years old and married. There was a history of syphilis, no gonorrhea, no acute infectious disease. Patient had worn a pair of corsets of the straight front type for three years. About eight months ago he noticed at the place where, in the sitting posture, the lower anterior rim of the corsets impinged on the upper aspect of the root of the penis, the appearance of a small indurated mass the size of a pea. Gradually this mass extended downward along the middle of the dorsum of the organ. The presence of this body caused the patient no inconvenience whatever, except in erection of the penis, when an increasing amount of upward incurvation acted as an insurmountable obstacle to the introduction of the organ into the female genital tract. The specimen which was removed measured 3.5 cm. x 1.7 cm. x 2 to 3 mm. and was a flat, thin plate of tissue containing areas of bony hardness. The bone runs through the middle portion of the sections, and the surrounding tissues are of different character on either side. On one side there is a layer of extremely dense fibrous tissue, showing a moderate number of compressed nuclei and a few small blood-vessels, and staining faintly with hematoxylin. Although a sharp line of demarcation is noted between the fibrous tissue and the bone, the two are in close relation. The different staining qualities of the two types of tissue are seen at a glance. On the other side

of the bone a narrow zone of the same type of dense fibrous tissue is seen. Beyond this is a layer of muscle fibers, loose connective tissue, and small blood-vessels. The dense fibrous tissue just described represents the tunica albuginea, and the bone formation has taken place in this tissue. The bone shows characteristic Haversian canals of various sizes, surrounded by more or less prominent concentric lamellae and lacunae. Some of the canals are of minute size and apparently empty; larger ones show the presence of cells having all the appearances of marrow cells. Running through the middle of the bone are several large oval shaped canals. Many of these contain true marrow and large multinuclear cells (osteoclasts?) and probably represent an attempt at the formation of a true central canal. At the junction of the bone with the fibrous tissue on both sides, typical osteoblasts are seen in many places.

Archives of Pediatrics, New York

June, XXX, No. 6, pp. 402-480

27 Amaurotic Family Idiocy. I. H. Coriat, Boston.
28 Neuroses of Childhood. C. W. Burr, Philadelphia.
29 Choreas of Childhood. T. H. Weisenburg, Philadelphia.
30 *Epilepsy in Childhood. J. H. Lloyd, Philadelphia.
31 Dispensary Treatment of Chorea. A. Newlin, Philadelphia.
32 *Recurrent Vomiting in Children. A. C. Mercer, Syracuse, N. Y.
33 Physician and Mentally Defective Child. I. T. Smart, New York.
34 Mental Influences in Treatment of Children. A. MacAlister, Camden, N. J.
35 Tumor of Cerebellum. S. S. Adams, Washington, D. C.
36 Cause and Prevention of Adenoid Growths in Children. H. E. Jordan, Charlottesville, Va.

30. **Epilepsy in Childhood.**—He who pins his faith entirely to drugs in treating epilepsy in children, Lloyd says, does not see and do his whole duty. Hygienic, mental and moral control are likewise of first importance. Attention to the gastro-intestinal tract, regulation of the sleeping hours, control of the schooling, outdoor life, and a wise discipline are all necessary.

32. **Recurrent Vomiting in Children.**—All treatment in a well-developed attack, Mercer says, has failed to stop the vomiting. The usual remedies given for emesis have been tried in vain. Nothing stays in the stomach. Based on the hypothesis that recurrent vomiting is an acid auto-intoxication, large doses of bicarbonate of soda have been administered. Ten to 30 grains have been given three times a day during the intervals, and every hour or two at the onset of an attack until 100 grains have been given, or 120 grains in twenty-four hours. Afterward a sufficient amount has been given to keep the urine alkaline. The alkaline treatment has been remarkably successful in some hands and a failure in others. It seems to be more likely to be successful when started in the prodromal period and a failure when begun too late. In fact, he says, one is led to believe that if the prodromes are promptly recognized and the diet is immediately curtailed, or food is temporarily omitted, the intestinal tract cleared and bicarbonate of soda given freely, an approaching attack can be prevented, even if the bicarbonate of soda has been discontinued during the preceding interval. The treatment is not simply alkaline. It is also one of dietetic rest, liver rest and toxic elimination, which is suggested by the occurrence of essentially the same events in the natural course of an attack, catharsis in treatment replacing emesis in the disease. Successful abortive treatment suggests prophylactic treatment along the same lines to be given at regular intervals somewhat shorter than the shortest interval noted in the history of a particular case. If treatment is begun too late for the stomach to retain the bicarbonate of soda, a dram or two of the remedy dissolved in 8 ounces of normal saline solution may be given by rectum. If vomiting continues, the thirsty tissues may be supplied with normal saline solution by high anemas or subcutaneous injections. If incomplete catabolism of fat with acidosis were a fundamental etiologic factor, an enema of dextrose might be indicated. Occasionally an hypodermic dose of morphin may be of service. In the intervals much can be done to improve the condition of patients by eliminating from their lives, so far as may be, all factors that have been known in one way or another to be etiologic in recurrent vomiting, as, for instance, constipation, over-eating, questionable diet, occasions for over-excitement, too much indoor life at home or in school, eye-strain, adenoids, or, in fact, anything, physical or psychical, which may lower resisting power or be a source of reflex irritation, and, on the other hand, by using all available means to build up resisting power and develop a hygienic and sane mode of living.

Arkansas Medical Society Journal, Little Rock

June, X, No. 1, pp. 1-36

37 Fee Splitting and Other Evils That Are Commercializing the Medical Profession. C. H. Cargile, Bentonville.

Boston Medical and Surgical Journal

July 3, CLXIX, No. 1, pp. 1-36

38 Some Abuses in Surgical Practice. H. Gage, Worcester, Mass.
39 Causes of Juvenile Delinquency. E. R. Spaulding, South Framingham, Mass.
40 Intestinal Stasis. E. G. Schlesinger, London.
41 *Five Generations of Blue Sclerotics and Associated Osteoporosis. F. A. Conlon, Lawrence, Mass.
42 Case Illustrating Efficiency of High Frequency Current in Treatment of Tumors of Bladder. J. D. Barney, Boston.
43 Compulsory Dentistry. F. A. Keyes, Boston.

41. **Five Generations of Blue Sclerotics.**—The history of the family reported by Conlon is as follows: Mr. B., aged 48, head of the present generation, has marked blue sclerotics and slight hypermetropia. He has broken a wrist and three ribs, but this occurred from considerable violence. His one sister had blue sclerotics and broke her hip from a trifling cause. Both this sister's children also have blue sclerotics, but no history of fractures. This patient's mother had the same blue sclerotics as did a sister whose only two children showed the same anomaly. Another sister had normal sclerotics, as did all of her five children. This man is married and his wife has normal colored sclera. They have five children and all five show this same peculiar porcelain blue appearing sclerotics. Of these children three show signs of bone fragility. Ethel, aged 12, fractured her left arm five years ago from a slight fall. In August, 1911, she broke and dislocated her left hip from a fall of ten or twelve inches. In May, 1912, a dog jumping on her knocked her down, breaking her right leg. Her right eye is amblyopic, while she has 2 D hypermetropia in her left eye. She has a well-marked embryotoxon on the upper and lower margin of each cornea. Sclera are a deep blue.

Beatrice, aged 25, has pale blue sclerotics. Embryotoxon on upper and lower margin of each cornea. Brown colored irides. Mrs. B., aged 22, deep blue sclerotics. Slight degree of hypermetropia. Blue colored irides. Has had one fracture. Her child, which was the only member of the fifth generation, was born a month ago, but died one week later. The child had deep blue sclera and died from congenital heart disease. Eva, aged 18, pale blue sclerotics. Embryotoxon on upper and lower margin of each cornea. One fracture of wrist four years ago. Moderate degree of hypermetropia astigmatism in each eye. Brown colored irides. Rose, aged 14, pale blue sclerotics. Embryotoxon on upper and lower corneal margin. No fracture. Brown colored irides. Emmetropic.

This family is of rather small physique. This was also characteristic of the family reported by Bishop Harmon. In no member did Conlon find the Fuchs colobomata or oval disk which were found in the Stephenson-Harmon family.

Bulletin of Johns Hopkins Hospital, Baltimore

July, XXIV, No. 269, pp. 199-230

44 Surgical Judgment. J. M. T. Finney, Baltimore.
45 *Tests for Hepatic Function and Disease under Experimental Conditions. G. H. Whipple, V. R. Mason and T. C. Peightal, Baltimore.
46 *Multiple Congenital Osteochondromas with Degeneration of Cranial Nerves and Muscular Dystrophy. T. R. Boggs, Baltimore.
47 *Pathology of Syphilitic Aortitis with Contribution to Formation of Aneurysms. M. C. Winternitz, Baltimore.
48 Aortic Aneurysm Rupturing Into Pulmonary Artery: Report of Three Cases. H. N. Stevenson, Baltimore.
49 *Allergy and Reinfection in Tuberculosis. E. R. Baldwin, Saranac Lake, N. Y.

45. **Tests for Hepatic Function.**—Passive congestion of the liver, it is claimed by the authors, cannot be produced in dogs to the extreme degree seen in human patients with broken cardiac compensation. However, it is possible to produce passive congestion of the abdominal viscera by means of stitches placed in the vena cava inferior just above the diaphragm, narrowing the lumen to 1 or 2 mm. in diameter. Such animals develop extreme ascites, collateral circulation, enlarged spleen, etc., and they show a slight decrease in liver excretion of phthalein with no escape in the urine. The Eck fistula produces a liver which has a scanty blood-supply, chiefly arterial, and the liver undergoes a slow atrophy with some fatty change in the early stages. These dogs show a decrease in phthalein output (20-30 per cent.) and the urine contains 0.5-3 per cent. phthalein. This indicates a certain degree of liver insufficiency and liver injury. It is interesting that an Eck fistula dog living over a year has an output which has returned practically to normal and only traces of phthalein in the urine, indicating that the liver has regained its functional balance. The clinical features of these animals support this interpretation. It is clear to the authors that phenoltetrachlorphthalein gives promise as a functional liver test. It is excreted in the bile through activity of the liver epithelium and not the bile duct epithelium. Any agent which injures the liver parenchyma or interferes with its functional activity will cause a drop in phthalein output in the feces. Acute liver injury also is associated with an escape of phthalein in the urine, they believe due to a modification of the phthalein through the agency of the injured liver cells, so that it passes through the renal epithelium.

46. **Multiple Congenital Osteochondromas.**—In Bogg's case the bone findings were as follows: Skull: Small, but normally proportioned. Mandible normal. No exostosis made out. Spine: No abnormalities made out, except that apparently there are six lumbar vertebrae and one less in sacrum. Pelvis: Thickening of os pubis, huge exostosis, projecting from left under side of ilium. Clavicles thickened at inner ends. Scapulae and ribs normal to palpation. Arms: Upper third of both humeri much thickened and irregular. Hand normal. Large, irregular exostoses, size of a man's fist, project from inner aspect at junction of upper and middle third. These are very hard, with small flaccid bursae at outermost points of each, containing a few bean-sized bony, or calcareous, bodies. The lower ends of humeri seem normal. Exostoses on both ends of the forearm bones. Radii overgrown and bowed outward. Small spur on each first metacarpal. Some irreguarity at bases of first phalanges. Other bones of wrists and hands normal. Legs: Upper ends of thighs much thickened, several spine-like outgrowths on each shaft. The fibulae show very large, bony tumors at the head, the left larger. These are irregular, firm, and no bursae are felt. The bony masses, as large as an orange, contrast strangely with the atrophic legs. Exostoses are present about the malleoli on both sides. Marked talipes equinus, bilateral, but no large exostoses are felt on bones of the feet. Urine: Faint trace of albumin and a few hyaline casts. No Bence-Jones protein. Blood: R. B. C. 6,400,000; Hb., 90 per cent.; W. B. C. 8,300. Differential count shows normal formula. No anisocytosis. No abnormal constituents. Roentgenoscopy: Rarefaction of bones, with numerous exostoses of osteochondromatous type, symmetrically disposed on extremeties and on pelvic bones. The largest tumor at the head of the left fibula is apparently cystic. The skull seems entirely free from exostoses and the sella turcia is normal in size. Summary: Multiple congenital osteochondromas (father similarly affected).

47. **Pathology of Syphilitic Aortitis.**—In Winternitz' opinion there is no evidence in favor of the view that the medial fibrosis occurring in aortitis is the source of the aneurysms occurring in this condition. On the other hand his case showed an aneurysm in its incipiency with the minute sac extending through the acutely broken and necrotic media to the adventitia, where there is a specific granuloma present. This, he believes, indicates that aneurysms of the aorta may form in the active stage of syphilis. The adventitia shows the specific granulomatous process most characteristically. An extension of the inflammation from the adventitia to the media no doubt plays an important rôle in the destruction of the medial fibers. In addition the rupture of the elastic lamellae may depend in part on the diminished support offered by the non-diseased adventitia.

49. **Allergy and Reinfection in Tuberculosis.**—Most adults Baldwin says, have received some tuberculous infection. A variable degree of specific allergy is thus acquired. During ordinary health the tissues repel tubercle bacilli, partly with the aid of specific allergy. Reinfection is mostly autogenous superinfection and due to disease, overstrain, trauma, or any cause of lowered vitality, whatever that may mean. Finally, as a corollary, adults are very little endangered by close contact with open tuberculosis, and not at all in ordinary association. Childhood is the time of infection, youth the time of superinfection, and that from extension of the primary disease. Qualify these statements as we may, Baldwin believes, it is time for a reaction against the extreme ideas of infection now prevailing. There has been too much read into the popular literature by health boards and lectures that has no sound basis in fact, and it needs to be dropped out or revised. More protection of children and better hygiene for adults are logically demanded, but beyond this the preachments about the danger of infection to adults in the present state of society are without justification from an experimental standpoint.

Journal of Abnormal Psychology, Boston

July, VIII, No. 2, pp. 73-136

50 Analysis and Interpretation of Dreams Based on Various Motives. M. Solomon, Chicago.
51 Simple Phobia. E. Jones, Toronto.
52 Unusual Type of Synesthesia. I. H. Coriat, Boston.
53 Perversion Not Commonly Noted. M. Otis.
54 How Far Is Environment Responsible for Delusions? E. E. Southard and A. W. Stearns, Boston.

Journal of Experimental Medicine, New York

July, XVIII, No. 1, pp. 1-112

55 *Oxygen Content of Blood in Rabbits Infected with Pneumococcus. F. W. Peabody, New York.
56 *Oxygen Content of Blood in Lobar Pneumonia. F. W. Peabody, New York.
57 *Agglutinins for Treponema Pallidum. J. A. Kolmer, Philadelphia.
58 *Intestinal Obstruction in Rabbit. C. H. Bunting and A. P. Jones, Madison, Wis.
59 Mechanical Obstruction to Circulation of Kidney Produced by Experimental Acute Toxic Nephropathy. A. A. Ghoreyeb, Boston.
60 *Experimental Pneumonia in Rabbits: Role of Leukocyte. B. S. Kline and M. C. Winternitz, Baltimore.
61 *Idem: Studies in Immunity. B. S. Kline and M. C. Winternitz, Baltimore.
62 Addition of Cholesterin to Alcoholic Extracts of Tissues Used for Antigens in Wassermann Reaction. I. C. Walker and H. F. Swift, New York.
63 Malarial Pigment (Hematin) As Active Factor in Production of Blood-Picture of Malaria. W. H. Brown, Chapel Hill, N. C.
64 Effect of Hematin on Circulation and Respiration. W. H. Brown and A. S. Loevenhart, Madison, Wis.

55. **Oxygen Content of Blood in Rabbits.**—In rabbits with a severe pneumococcus bacteriemia, Peabody found that the oxygen-combining power of the blood falls progressively, up to the time of death. Coincident with this there is an even more marked fall in the oxygen content of the arterial blood. The changes in the blood in infected animals are analogous to those seen when the pneumococcus is grown on blood *in vitro*. They are due to the conversion of hemoglobin into methemoglobin.

56. **Oxygen Content of Blood in Lobar Pneumonia.**—In most cases of uncomplicated lobar pneumonia the decrease of respiratory surface is completely compensated for, and the oxygen content of the blood is within normal limits. Occasional cases of uncomplicated pneumonia have an oxygen content of the venous blood which is below normal. In the two cases reported by Peabody, this was associated with a carbon dioxid content of the blood which was higher than normal, and the condition was apparently due to an interference with the respiratory exchange of gases. In the terminal stage of the fatal cases of pneumonia in which death does not occur

with great suddenness, there is often a progressive diminution in the oxygen content of the blood. Synchronous with this is a progressive decrease in the oxygen-combining capacity of the blood. These changes are usually seen in patients in whom an intense bacteriemia has developed and are analogous to those found in the arterial blood of infected rabbits, and to those resulting from the growth of the pneumococcus in blood *in vitro*. In all three conditions there is probably a change of oxyhemoglobin to methemoglobin. This change of the hemoglobin molecule, so that it no longer takes up and gives off oxygen readily, is probably a factor in the immediate cause of death in many cases of pneumonia.

57. **Agglutinins for Treponema Pallidum.**—Kolmer summarizes his paper as follows: There is no demonstrable amount of agglutinin for *Treponema pallidum* (Noguchi) in normal human and normal rabbit serum in dilutions as low as 1:20. Agglutinins for *Treponema pallidum* are readily produced in young rabbits by the administration of pure cultures of living spirochetes. There is no appreciable amount of agglutinin for *Treponema pallidum* culture used in the serums of secondary and tertiary syphilis or in the cerebrospinal fluid of tertiary syphilis in dilutions of 1:20 to 1:640.

58. **Intestinal Obstruction in Rabbit.**— The authors voice the conviction that in the fasting rabbit the duodenal mucosa alone secretes, that this secretion comes from the glands of Brunner, and, being toxic, is responsible for the death of the animal with obstruction of the small intestine at whatever level the obstruction be made.

60. **Experimental Pneumonia in Rabbits.**—The importance of the leukocyte in the resistance of animals to experimental pneumonia, the authors believe, is emphasized by the fact that animals treated with benzol, a leukotoxic substance, rapidly succumb to the disease, while animals treated in like manner with toluol, a very similar chemical substance causing no leukopenia, show no decreased resistance. The rôle of the leukocyte in the resistance of animals to experimental pneumonia is further emphasized by the fact that animals that respond to the pneumococcus infection with a leukocytosis, as occurs after the repeated injection of toluol, are more resistant to the pneumonia. Further, the hyperleukocytosis produced by repeated injection of nutrose before the production of pneumonia likewise seems to increase the resistance of the animals. Experimental pneumonia is not necessarily fatal in rabbits. The factors determining the outcome of the disease are numerous; among these is the number of bacteria inoculated. Animals receiving small doses usually survive, while those receiving comparatively large numbers usually succumb.

61. **Idem.**—Kline and Winternitz found that rabbits recovering from one attack of experimental pneumonia possess an active immunity. Such animals may subsequently withstand repeated increasing doses of pneumococci intratracheally. Death may supervene after any one of subsequent injections, but it seems to depend partly on the chronic changes in the cardiorespiratory apparatus. It may at least be said that it is usually unassociated with a septicemia which is an invariable accompaniment of fatal primary lobar pneumonia. The serum from animals actively immunized by the repeated intratracheal inoculations with pneumococci may be used successfully to confer a passive immunity against the homologous organism.

Journal of Outdoor Life, New York

July, X, No. 7, pp. 193-222

65 Diet and Tuberculosis. C. Flick.
66 Inexpensive Home-Made Milk Refrigerator. A. F. Hess, New York.
67 Taking Cure in City. F. Erdwurm, New York.
68 After-Care of Sanatorium Patients. J. B. Hawes, Boston.

Laryngoscope, St. Louis

June, XXIII, No. 6, pp. 641-719

69 Atrophic Rhinitis in Its Historical, Etiologic and Histologic Aspects. J. Wright, New York.
70 Complications of Operation for Removal of Tonsils. C. W. Richardson, Washington, D. C.
71 Differential Diagnosis between Vincent's Angina and Primary Syphilitic Lesion of Tonsil. R. Levy, Denver.
72 Suspension Laryngoscopy, with Report of Cases. S. Iglauer, Cincinnati.
73 Regeneration of Membrana Tympani. G. M. Coates, Philadelphia.
74 Primary Tuberculosis of Middle-Ear. C. H. Long, Chicago.
75 Foreign Body in Larynx and Trachea Removed by Aid of Suspension Laryngoscope. S. Iglauer, Cincinnati.
76 Direct Laryngoscopes. C. Jackson, Pittsburgh.

Medical Record, New York

July 5, LXXXIV, No. 1, pp. 1-46

77 Methods of Localization of Spinal Tumors with Reference to Their Medical and Surgical Treatment. E. Castelli, New York.
78 Custodial Power Over Inmates of State Institutions for Defectives. W. T. Shanahan, Sonyea, N. Y.
79 Bilateral Optic Pseudoneuritis and Unilateral Medullated Nerve Fibers in Cranial Injury by Blunt Force. M. Tulmey, New York.
80 Hexamethylenamin in Surgery. A. C. Burnham, New York
81 Sexual Periodicity in Male. C. P. Oberndorf, New York.
82 Foreign Body in Right Bronchus. Lower Bronchoscopy. Successful Extraction. G. H. Cocks, New York.

Military Surgeon, Washington, D. C.

June, XXXII, No. 6, pp. 527-622

83 Relation of Medical Officers to Military Discipline. R. H Pierson, U. S. Army.
84 Hygiene of Tropics. F. A. Ashford, U. S. Navy.
85 Venereal Disease in United States Navy: Prevention and Prophylaxis. R. E. Ledbetter, U. S. Navy.
86 *Series of Cases of Pneumonia Treated by Vaccines. W. N. Bispham, U. S. Army.
87 Straddle Trench Cover. R. U. Patterson, U. S. Army.
88 Sanitation Fly Pest. C. B. Walls, Chicago.

86. **Vaccines in Pneumonia.**—The series of cases which Bispham reports comprised nineteen cases with two deaths. Six patients were treated symptomatically with two deaths, and in thirteen patients vaccine was administered with no deaths. No selection of cases was made, but the patients treated medically were those first occurring, and as soon as the vaccine was obtained all others were inoculated. The severity of the cases throughout the epidemic was about the same, the first few not being more serious than the others. The vaccine first used was prepared at the Army Medical School and subsequently a stock vaccine was used. No attempt was made to obtain autogenous vaccine, as the heterogenous variety was so satisfactory. The treatment should begin as early as a diagnosis is made. Where delay occurs, the success of the treatment is not so immediate and not so complete. The dosage is regulated on a sliding scale. An injection of 50 million bacteria is, in most cases, sufficient as an initial dose, but some sthenic cases will respond more favorably to larger doses up to possibly 150 million. All subsequent injections should be increased rapidly, giving 100 million on the second day, 200 million on the third, etc. The clinical picture of the patient should regulate, however, the amount used, and to err on the side of excess is as detrimental as to give too little. These doses are given in the following way: Immediately after a diagnosis is made, the primary injection is administered. On the following day, if the patient improves, no treatment is necessary, but if the temperature remains high and the case is sthenic, an increased amount may be given at this time. On the third day, if the patient does not show sufficient abatement of symptoms, give another inoculation. This method of grading the treatment by observing the clinical symptoms must be adhered to, though if opsonic counts could be taken such observations would be a valuable check on the work. The immediate fall of temperature after the injection of each dose of the vaccine, together with the great relief from the distressing symptoms, such as severe pain and dyspnea, was very marked. None of these patients treated by the vaccines received other treatment, though stimulants were administered when thought necessary.

Missouri State Medical Association Journal

June, IX, No. 12, pp. 385-428

89 Propylaxis of Poliomyelitis Anterior Acuta. E. W. Saunders, St. Louis.
90 Roentgen-Ray Diagnosis of Thoracic Aneurysm. R. D. Carman, Rochester, Minn.
91 Transplantation of Bone. E. F. Robinson, Kansas City.
92 State Hospital Situation in Missouri. M. A. Bliss, St. Louis.
93 Blood-Pressure. L. Carthrae, Corder
94 Abdominal Pain. G. J. Weitz, Boonville.

New Mexico Medical Journal, Las Cruces

June, X, No. 3, pp. 61-88

95 Typhoid. E. T. Dunnaway, Portales.
96 Tonsil in Its Relation to General Diseases. T. W. Crowder, El Paso.
97 Tonsils as Avenues of Infections and Indications for Their Removal. D. D. Swearingen, Clovis.
98 Poliomyelitis. M. K. Wylder, Albuquerque.

New York State Journal of Medicine, New York

June, XIII, No. 6, pp. 297-354

99 Further Control of Morbidity and Mortality in Abdominal Operations for Pelvic Diseases. G. W. Crile, Cleveland.
100 Conclusions Drawn from Quarter Century's Work in Brain Surgery. R. Park, Buffalo.
101 Present Status of Nerve Injection. O. Kiliani, New York.
102 Recurrent Vomiting in Children. A. C. Mercer, Syracuse.
103 Pituitrin in Obstetrics. J. K. Quigley, Rochester.
104 Difficulties in Diagnosis of Extra-Uterine Pregnancy. S. M. Brickner, New York.
105 *Symptoms and Diagnosis of Involvement of Heart in Syphilis (Based on Study of 200 Cases.) H. Brooks and J. H. Carroll, New York.
106 Abbott Treatment of Scoliosis. R. R. Fitch and H. L. Prince, Rochester.
107 Physician and Mentally Defective Child. I. T. Smart, New York.
108 *Auscultation At Acromion Process—Its Importance in Apical Disease. R. Abrahams, New York.

105. Abstracted in THE JOURNAL, May 10, p. 1483.

108. Also published in the *Archives for Diagnosis*, May, 1913, and abstracted in THE JOURNAL, July 12, 1913, p. 142.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

June, XVI, No. 6, pp. 259-306

109 Treatment of Facial Paralysis by Nerve Transplantation. S. H. Watts, Charlottesville, Va.
110 Internal Injuries. E. B. Claybrook, Cumberland, Md.
111 Anoci-Association with Special Reference to Abdominal and Exophthalmic Operations. G. W. Crile, Cleveland.

Ophthalmic Record, Chicago

June, XXII, No. 6, pp. 291-348

112 Concerning Dermoids and Dermo-Lipomas of Conjunctiva. W. B. Weidler, New York.
113 Case of Non-Magnetic Steel in Vitreous. F. Allport and A. Rochester, Chicago.
114 Some Simple Attachments for Electric Hand Lamps. F. H. Verhoeff, Boston.
115 Case of Gumma of Iris after Use of Salvarsan. A. Brav, Philadelphia.
116 Proper and Improper Methods of Publicity from Specialist's Standpoint. H. V. Würdenmann, Seattle, Wash.
117 Enucleation under Ciliary Ganglion Anesthesia. J. S. Wyler, Cincinnati.
118 Case of Pulsating Exophthalmos. G. H. Mathewson, Montreal.

Southern Medical Journal, Nashville

June, VI, No. 6, pp. 355-422

119 Fly-Borne Typhoid and Its Control in Jacksonville. C. E. Terry, Jacksonville, Fla.
120 Present Status of Our Knowledge Regarding Transmission of Typhoid. A. W. Freeman, Richmond, Va.
121 Vaccine Therapy. I. E. Colgin, Waco, Texas.
122 Present Status of Our Knowledge Regarding Parasitic Amebae. C. F. Craig, Washington, D. C.
123 Diagnosis and Treatment of Amebic Dysentery. E. M. Mason, Birmingham, Ala.
124 *Old Ununited Fracture of Anatomic Neck of Femur—with Suggestions for Immediate Treatment of this Fracture. J. B. Murphy, Chicago.
125 *Theory of Etiology of Pellagra. T. L. Driscoll, Cartersville, Ga.
126 Uterine Hemorrhage. H. A. Royster, Raleigh, N. C.
127 Two Unusual Cases of Nasal Polypus, Occurring in Sisters, with Results of Operations. C. W. Kollock, Charleston, S. C.
128 Bacteriology of Epidemic Colds. S. L. Ledbetter, Birmingham, Ala.
129 After-Treatment of Cases of Radical Operations in Otorhinology. J. A. Stucky, Lexington, Ky.

124. **Ununited Fracture of Femur.**—The indications for treatment of recent fractures of the neck of the femur according to Murphy are (1) that the shortening should be overcome by extension in all except the impacted cases; (2) that the rotation should be overcome by holding the toes in a perpendicular position, the foot being neither everted nor inverted; (3) that immobilization should be effected so that the fractured fragments be pressed into each other by superlative abduction of both legs, which is secured by putting the patient into the travois splint. By means of this superlative abduction all of the adductor muscles, fascia and capsular ligaments are utilized to force the distal fragments firmly against the proximal fragment and to keep it there constantly during the process of repair. At the same time the traction of the trochanter major group of muscles is overcome by the relaxation produced in them by this superlative abduction. This position must be maintained constantly and uniformly throughout the entire course of the process of repair. Murphy has observed clinically that absorption of the neck does not take place when immobilization is made effectively and continuously, so that the contracting of the fractured surfaces is maintained. The long external splint, with or without extension, the ordinary Thomas splint, the Maxwell-Ruth splint, do not fulfil the indications of proper management of fractures of the neck of the femur. The plaster-of-Paris cast, including both hips with abduction of both legs, meets the conditions in impacted fracture of the neck, but it is very inconvenient to the patient. The so-called "railway splint" is likewise deficient. While most of these splints are worthless in the management of these cases, yet sometimes, notwithstanding their defects, it is possible to secure union of the fragments with their aid. But no splint, even with extension, abduction or sidewise traction, can secure union of the fragments when there is interposing between them capsule or other soft tissue. Murphy made that observation in four successive operations done for ununited fracture of the neck of the femur. In some of them the interposition of soft tissue can readily be recognized in the skiagram, while in others it is impossible to detect it. The amount of weight attached to the extension apparatus placed on the limb must vary with the muscular development of the individual patient. As a rule, it should range from 15 to 35 pounds. To attach a 10 or 15-pound weight to the leg of a muscular patient is of absolutely no value whatever. Murphy sounds a note of warning in applying the Buck's extension, namely, that the external popliteal nerve, where it passes around the neck of the fibula, from behind forward, should be freed from all pressure by bandages or cast, if one is desirous of avoiding the characteristic drop-foot paralysis, which is caused by pressure on that nerve. In all cases in which Murphy applies a plaster cast to the leg, including the head of the fibula, he always cuts out a window over this bone, so that there will be absolutely no pressure on the nerve. He cites nine cases of old ununited fractures treated successfully by nailing.

125. **Etiology of Pellagra.**—Driscoll believes pellagra to be due to absence of a hormone or a chemical substance in the grain capsule, and the omission of this from the dietary of the cornbread eater, by artificial means, is responsible. The following work has been done in corroboration of this theory: Chickens fed on corn with the covering removed developed manifestations on legs similar to pellagra in man. Chickens fed on bran only develop same condition as those fed on corn exclusive of bran. Feeding whole grain intact will cause disappearance of lesions in about three weeks.

West Virginia Medical Journal, Wheeling

June, VII, No. 12, pp. 399-434

130 Present Status of Surgery in Fractures. C. S. White, Washington, D. C.
131 Treatment of Insane in Psychopathic Wards. J. H. W. Rhein, Philadelphia.
132 Study of Diagnosis in Children. O. M. Staats, Wheeling.
133 Helplessness of Physician. C. H. Maxwell, Morgantown.

Wisconsin Medical Journal, Milwaukee

June, XII, No. 1, pp. 1-84

134 Certain Aspects of Intestinal Bacteriology in Health and Disease. A. I. Kendall, Chicago.
135 Non-Surgical Treatment of Otitis Media. O. N. Mortenson, Waupaca.
136 Radical Operation for Hernia under Cocain Analgesia, Experience in Twenty-Five Cases. R. G. Sayle, Milwaukee.
137 Cutaneous Reaction of Syphilis. L. M. Warfield, Milwaukee.
138 The Physician: What Are Requirements? W. B. Hopkins, Cumberland.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

June, X, No. 114, pp. 241-288

1 Some Cases of Mental Deficiency. E. B. Smith.
2 Epidemic of Measles at Rotuma, 1911. B. G. Corney.
3 Primary Streptococcus Peritonitis in Child, with Septicemia, Ending in Recovery. A. MacLennan and J. W. McNee.
4 Case of Tuberculosis of Ear. G. N. Biggs.

British Medical Journal, London

June 21, I, No. 2738, pp. 1305-1356

5 *Spinal Anesthesia by Tropacocain. J. T. J. Morrison.
6 *Lacrimal Gland in Surgical Anesthesia. L. T. Rutherford.
7 Trypanosomiasis and Big Game. W. Yorke.
8 Outbreak of Febrile Disease in Industrial School. K. M. Duncan.
9 Case of Nodular Leukemia. R. Reid, W. Calwell and W. W. D. Thomson.
10 *Case Illustrating Great Tenacity of Life. A. Turnbull.
11 Influence of Marienbad Sulphate Water on Albuminuria. M. Porges.

5. **Spinal Anesthesia by Tropacocain.**—The position of spinal anesthesia is summed up by Morrison as follows: It is a procedure of proved value and simple technic. Its province is subdiaphragmatic operations. There is no prohibitive age limit. By blocking afferent paths it prevents surgical shock. It induces muscular relaxation, quiet breathing and abdominal stillness, and thus conduces to rapidity and safety in abdominal surgery. Used with discretion in conditions of extreme asthenia and instability of the medullary centers due to toxemia, exhausting disease, traumatic shock and old age, it is superior to ether and chloroform. It promotes the patient's comfort and nutrition in the postoperative stage. By lowering blood-pressure it tends to faintness and respiratory depression. The patient should therefore be carefully watched after injection, and treated as required by means of diffusible stimulants, pituitrin, saline infusion and artificial respiration. In a small percentage of cases it is inadequate, and must be supplemented by general anesthesia. It increases the possibilities of surgery by facilitating the work of a surgeon in the absence of a competent anesthetist or assistant. The procedure should be taught in medical schools.

6. **Lacrimal Gland in Surgical Anesthesia.**—Rutherford insists on the truth of the following three statements: 1. That since the appearance of a lacrimal secretion during anesthesia is a constant phenomenon, it therefore deserves mention in books devoted to the subject of anesthetics. 2. That the lacrimal secretion, bearing as it does a definite relation to the depth of narcosis, is of value to the anesthetist. 3. That since the behavior of the lacrimal glands under anesthesia is almost constant and since the exceptions to the general rule are easily recognized, the value of this sign as an aid to the administration of an anesthetic must be at once apparent.

10. **Case Illustrating Great Tenacity of Life.**—Turnbull reports the case of a man who walked half a mile after receiving a fractured skull, extensive fractures of the ribs, pulping of the spleen and pulping of the kidney and lesions in the vicinity of the solar plexus. The patient rapidly sank into unconsciousness and died with symptoms pointing to internal hemorrhage about an hour after admission. He had a fracture of the frontal bone extending down on the left side to the inner end of the supraorbital ridge. This part measured 2½ inches and had a small offshoot on either side. On the base of the skull the fracture was traced along the left orbital plate and across the sella turcica to the right middle fossa, ending just above the base of the petrous bone on the right side. A slight diffuse subarachnoid hemorrhage was present, especially over the posterior part of the right parietal lobe. A fracture was found through the first left costal cartilage near the sternum, and some tearing up of the sterno-clavicular ligaments and fibroplate; no actual dislocation. The second, third, fourth, fifth and sixth ribs were broken through about their middles. The parietal pleura was torn over the broken ends of the third and fourth ribs, and 6 ounces of blood was found in the left pleural sac. The eleventh rib was fractured toward the exterior end. Both lungs edematous, otherwise healthy; no perforation of left lung, only slight bruising. Heart fairly normal. Two pints of fresh blood were found in the abdominal cavity. The spleen was extensively lacerated. There was much hemorrhage into the connective tissue round the left kidney and suprarenal. The left kidney was markedly crushed and lacerated. The right kidney was uninjured, as also was the liver. The esophagus, stomach and intestines were uninjured. No blood in the feces and no injury to the bladder. No injuries to the bones or spinal column.

Dublin Journal of Medical Science

June, III, No. 498, pp. 401-480

12 *Treatment of Hemoptysis. J. Little.
13 Intratracheal Insufflation of Ether. H. de L. Crawford.
14 *Two Unusual Cases of Enteric Fever. J. Moore.

12. **Treatment of Hemoptysis.**—Little places confidence in the hypodermic injection of morphin (gr. 1/6) and atropin (gr. 1/20), perfect quiet, and more particularly the avoidance of any physical examination beyond laying the chest piece of a binaural stethoscope on the chest and hearing what can be heard without permitting the patient to cough or draw a deep breath, and in very spare diet and on the gentle opening of the bowels.

14. **Enteric Fever.**—The first case cited by Moore furnishes an example of true relapse in enteric fever. It is also interesting in view of the absence of any serious intestinal symptoms—a state of things accounted for by the patient's age (57 years); the presence of a decided leukocytosis in the third febrile attack; and the occurrence of catarrhal jaundice as a sequel. Bearing in mind the liability of the gall-bladder to become infected by the *Bacillus typhosus*, and the part which enteric fever plays in the production of gall-stones, Moore kept the bowels free with frequent doses of castor oil, and prescribed benzoate of sodium in full doses. He also took daily 15 grains of hexamethylenamin, well diluted, for some time. The second case was one of enteric fever with epistaxis and intestinal hemorrhage. Protracted course. Convalescence complicated by "typhoid spine" which cleared up the diagnosis. Treatment consisted in rest to the spine, with massage of the back and lower limbs. The bowels were kept moving by compound cascara tablets taken as required, and for four days out of every seven a tonic mixture containing in each dose 4 minims of liquor strychnin.

Edinburgh Medical Journal

June, X, No. 6, pp. 481-576

15 Outward Projection of Retinal Images and Its Bearing on Shooting. G. A. Berry.
16 *Method of Treating Umbilical Hernia. J. H. Pringle.
17 Pressure Experienced by Fetus in Utero During Pregnancy; with Special Reference to Achondroplasia (Chondrodystrophia Fetalis). D. B. Hart.
18 Causation and Treatment of Deformities Following Anterior Poliomyelitis. B. P. Campbell.
19 Case of Amyotonia Congenita (Myotonia-Congenita of Oppenheim). D. Cotterill.
20 Linnaeus as Physician. H. M. Church.

16. **Treatment of Umbilical Hernia.**—A modified combination of the splitting and Mayo methods is employed by Pringle. A large elliptic area of skin and subcutaneous fat, including the thin skin covering the hernia, is removed. The vertical breadth of skin and fat which is to be removed is gauged by holding up the abdominal wall until the large suprapubic fold of tissue, present in all these patients, disappears; the transverse extent of the wound is anything from 10 to 16 inches. The removal of this elliptic area is generally commenced from below, and the subcutaneous fat must be removed fairly cleanly from the underlying sheath. The sac is opened close to the ring, all its loculi are emptied of their contents, which are returned into the abdomen, and the whole sac is removed. A transverse incision is then made from each lateral margin of the ring to the outer limit of each rectal sheath and the two portions above and below

this incision are dissected as two flaps off the anterior surface of the two recti muscles, the one upward, the other downward, the tissues of the stretched linea alba being split horizontally, so as to maintain the halves of the two sheaths in continuity with each other. This dissection of the two sheath flaps is to be made upward and downward sufficiently far to permit easy approximation of the inner borders of the two recti for the whole distance in which they are exposed.

One, two or three mattress sutures, according to requirements, taking a wide grip, are passed through the two recti and the posterior layer of the sheath and the peritoneum. These are drawn tight enough to approximate the two muscles, but before they are tied the now bunched up posterior sheath and peritoneum, as well as the margins of the opening "ring" through these structures, are sutured in a vertical mesial line; the mattress sutures are now tied, and then the two adjacent margins of the recti are also sutured. A series of sutures is next placed to carry and fix the cut border of the inferior flap, made from the anterior sheath of the rectus, as high up behind the upper flap as possible; and then the cut border of the upper flap is sutured over and in front of the inferior flap as far down as it will come, so that good and wide overlapping is obtained. The margins of the superficial wound are now approximated. If drainage should be considered necessary it may be from either angle of the wound or through a stab wound in the tissues of the abdominal wall just above the pubis. The patients whom Pringle has treated in this way have all done well; in spite of the free dissection and manipulation of the rectus sheath the flaps formed from it have not suffered in their vitality at all.

Glasgow Medical Journal

June, LXXIX, No. 6, pp. 401-475

21 Abdominal Incisions and Intestinal Anastomosis in Treatment of Carcinoma of Colon. A. E. Maylard.
22 Adulteration of Foodstuffs and Its Influence on Digestion. W. Watson.
23 General Practitioner's Position in Relation to Pulmonary Tuberculosis. A. Gibson.

Journal of Tropical Medicine and Hygiene, London

June 2, XVI, No. 11, pp. 161-176

24 Cell Inclusions in Leukocytes of Blackwater Fever and Other Tropical Diseases. G. C. Low and C. M. Wenyon.
25 Cultivation of Bacillus Leprae. H. Fraser.
26 Cirrhosis of Liver of Malarial Origin. L. Nicholls.
27 Meteorology of Malaria. M. D. O'Connell.
28 Native Treatment of Trypanosomiasis. A. Brown.

June 16, No. 12, pp. 177-192

29 Clinical Study of Malaria in Panama. J. P. Bates.

Lancet, London

June 21, I, No. 4686, pp. 1715-1786

30 Place of Climatology in Medicine. W. Gordon.
31 *Tetragenus Septicemia. J. Byers and T. Houston.
32 Intra-Abdominal Pressure in Pregnancy. R. H. Paramore.
33 *New Spirochete Found in Human Blood. H. Chambers.
34 Case of Spinal Tumor with Scoliosis; Operation. W. Harris and A. S. B. Bankart.
35 Results of Further Experience with Solid Carbon Dioxid. R. Morton.
36 Ingestion of Bacteria by Subepithelial Lymph-Nodes in Health. K. H. Digby.

31. **Tetragenus Septicemia.**—The patient was a boy between 10 and 11 years of age, who for eight years had had recurrent attacks of acute illness, which had tended to become longer, more severe and more intractable. The attacks usually began as a "cold" in the head and nasopharynx, spreading to the ear, to the lungs as a bronchopneumonia and to the intestinal tract, causing diarrhea. The attack which forms the basis of the communication by Byers and Houston commenced in December, 1912. When first seen the boy was suffering from catarrh of the nose and throat, which spread to the ears. At first he improved, but early in January a fresh attack supervened. It soon spread to the ears and became complicated by a bronchopneumonia. Bacteriologic examination at this state revealed the presence of the *Micrococcus catarrhalis*, the streptococcus and a few diplococci. A mixed autogenous vaccine of the first two organisms was then given without benefit; indeed, the patient shortly afterward became more acutely ill with pronchopneumonia and pleurisy. Futher examination of the cultures showed the presence of the *Micrococcus tetragenus*, and the same organism was recovered by examination of blood-culture. The fact that this organism was pathogenic in this case was then confirmed by opsonic index determinations. An autogenous vaccine was at once made from it and used in the treatment of the case with the best results. At a later stage a pseudodiphtheritic organism was found in the discharge from the ears and a vaccine was made from this as well.

In commenting on this interesting case, Byers points out that it illustrates the great progress made in recent years in the diagnosis and treatment of disease, since we are now enabled to make an accurate bacteriologic diagnosis in many cases which would formerly have remained obscure, and to base a rational therapy on the information so obtained. He suggests that the chronic nature of the case under consideration was probably due to a chronic infection by the *Micrococcus tetragenus* in the presence of other organisms. Houston, in commenting on the bacteriologic aspects of the case, discusses the evidence on which the causal rôle of the *Micrococcus tetragenus* was established. He also points out the difficulties encountered in demonstrating the bacteriologic cause of affections of the respiratory tract.

33. **Spirochete in Human Blood.**—In the course of a research on the pathology of exophthalmic goiter a spirochete was found by Chambers in human blood which has not been previously described as infecting the blood-stream in man. During the last nine years Chambers has examined over 500 specimens removed by surgical operation. In some of the goiter cases the thyroid showed changes which indicate a chronic inflammatory process, and it was pointed out that these inflammatory changes are similar to the effects produced in tissues by infection with the *Treponema pallidum*. In many of these goiter cases syphilis can be excluded; many attempts were, therefore, made to find evidence of the presence of some other infecting agent in the thyroid but without success. The majority of goiter specimens showing these histologic changes were from patients who had suffered from the symptoms of hyperthyroidism, i. e., they were cases of primary or secondary exophthalmic goiter. In many cases of primary exophthalmic goiter if the gland be examined carefully it is found that the changes are not uniform throughout the gland tissue. The absence of colloid and alteration in shape of the vesicles, with consequent opacity of the tissue, occur sometimes in localized areas. White nodules are found in the gland varying from the size of miliary tubercles to patches half an inch in diameter and larger, and in the center of these nodules it is common to find a collection of lymphocytes and plasma cells.

This distribution and the recognition of the fact that vesicles similar in shape to those in exophthalmic goiter are found in a thyroid inflamed as a result of injury give support to the idea that the cause for the condition is an organism which has lodged in the center of these foci. It occurred to Chambers that if this hypothesis be true the infecting agent would probably not be limited to the thyroid. There might be a general blood infection, the thyroid changes and symptoms being due to local congestion or inflammatory changes caused by such infection, a somewhat parallel condition to what occurs in trypanosomiasis. The blood from several cases of exophthalmic goiter was, therefore, examined, and a spirochaeta was found, having in all the cases the same apparent characteristics. Further examination, with somewhat improved technic, has shown, however, that this organism is extremely common in human blood, and that it occurs in almost every specimen examined, both patients and healthy people. Up to the present time the blood from twelve cases of exophthalmic goiter, from twenty patients suffering from other diseases, and from fifteen healthy people has been examined, a total of forty-seven cases, and the organism has been detected in all except three. It has been found in children as well as

in adults. The organism is actively motile and is very variable both in length and thickness. The majority measure from 4 microns to 30 microns in length; very long forms are, however, met with. Some are extremely thin like the *Treponema pallidum*, others are almost as thick as typhoid bacilli.

Annales de Gynécologie et d'Obstétrique, Paris

May, XL, No. 5, pp. 257-319

37 *Malignant Chorio-Epithelioma. A. Pollosson and H. Violet.
38 *Exploratory Curetting in Diagnosis of Uterine Cancer. A. Siredey and H. Lemaire.
39 Histologic Study of Cicatrix after Cesarean Section. Audebert.

37. **Chorio-Epithelioma.**—Pollosson and Violet have compiled from the literature 238 cases of malignant syncytioma which, they say, added to Briquel's 217 cases brings to 455 the total on record. They have encountered seven cases during the last five years. In only 203 of the total cases was a preceding mole known; abortion in 135 cases; normal delivery in ninety-nine and tubal pregnancy in twelve cases. They emphasize the importance of prophylaxis by not permitting retention of placental tissue or relics of a mole, and curetting early and thoroughly when the curet is needed. They urge further systematic microscopic examination of all the scrapings; this will permit early diagnosis. In this last series of 238 cases the uterus was removed in 179 and in 114 of the previous series, with forty-two deaths in the earliest series but only seventeen deaths in the 179 cases of the latest series. Over 68 per cent. of the women recovered after the operation in the mole cases, but only about 58 per cent. in the abortion or delivery cases, and only in 33 per cent. of the tubal pregnancy cases. The better outcome in the mole cases is probably because the patients are under supervision and thus receive operative treatment earlier. In twenty-three cases there was recurrence; in six the interval was from six months to two years; they know of no case of recurrence later than this. The metastases of a chorio-epithelioma can be removed separately, consequently metastases in the vagina do not contraindicate removal of the primary focus. The urethra, bladder, rectum and vulva should be examined for metastasis and operations done accordingly, but visceral metastasis is inaccessible and hence must be regarded as a contraindication to radical treatment.

38. **The Curet in the Early Diagnosis of Uterine Cancer.**—Siredey and Lemaire have made a practice in the last few years of an exploratory curetting of the uterus on the least suspicion of cancer, and they thus detected incipient malignant disease in eight cases before there were any reliable symptoms of the cancer. In three other cases irregular hemorrhage and a red, bleeding lump on the cervix, with abdominal pain and retroflexed uterus rendered cancer almost positive in one case but the microscope showed ordinary metritis, and in this as in the two others of hemorrhagic inflammation the trouble proved to be non-malignant and subsided after curetting.

Archives de Médecine des Enfants, Paris

May, XVI, No. 5, pp. 321-400

40 *Iodin Sterilization of Children's Skin. Monod.
41 *Curable Meningitis in Children. J. Comby.

June, No. 6, pp. 401-480

42 Milk Powder in Infant-Feeding. (Le lait desséché dans l'alimentation du nourrisson bien portant et du nourrisson malade.) Bonnamour. Commenced in No. 5. (Les qualités que doit posséder un bon lait desséché au point de vue médicale.) C. Porcher.
43 *Recurring Purulent Pleurisy. J. Comby.

40. **Iodin Sterilization of the Skin in Children.**—Monod never noticed any by-effects in the 140 cases in which the field was prepared for the operation by painting with tincture of iodin. Nineteen of the little patients were less than 2 years old. When the operation was on the scrotum the iodin was washed off with denatured alcohol after it had dried, but in the last few months this has not been done until after the operation. C.-Boisse has recently reported two cases in which an eruption and fever resembling scarlet fever developed after the herniotomy or appendicectomy on a child. He ascribes the disturbances to injury from the iodin, but Monod thinks that the data show rather that the child happened to be coming down with scarlet fever at the time of the operation. Or possibly the cases may have been the rare affection known as surgical scarlet fever.

41. **Curable Meningitis in Children.**—Comby relates that he was called to a child of 3 apparently moribund from acute tuberculous meningitis. He remembered that he had successfully treated the child in early infancy for manifestations of inherited syphilis, and consequently he began to treat the meningitis on the same basis and all symptoms had subsided by the end of a few days. The cerebrospinal fluid in these cases is limpid, with marked lymphocytosis. He has also encountered a similar meningitis with lymphocytosis in three children with mumps. The first was a boy of 12 convalescing from mumps; there was no coma, but the other symptoms of meningitis, including lymphocytosis in the cerebrospinal fluid, were pronounced for a few days and then subsided. The onset of epidemic poliomyelitis may deceptively simulate acute meningitis,, but the limpid cerebrospinal fluid shows merely lymphocytosis. Inoculation of animals with the fluid gave constantly negative results in Hutinel's eight cases of this kind. The children all recovered with some slight motor disturbances. The pains, the hyperesthesia and the absence of delirium and stupor aid in excluding tuberculous meningitis. It is probable that a more or less rudimentary form of poliomyelitis may have been responsible for the meningitis in the cases published as "recovery from tuberculous meningitis." Even a suspicion of paralysis at the time or afterward confirms this assumption. At the same time Barbier and Gougelet have recently compiled from the literature twenty-four cases of unmistakable tuberculous meningitis which terminated in recovery, although the disease recurred later in a few instances. They also have compiled a number of cases of transient, incomplete forms of tuberculous meningitis followed by apparently complete recovery. The fact that the children recovered casts a doubt on the diagnosis of tuberculosis, but one, at least, of the children has succumbed since to a new flaring up of the meningitis. The points which speak in favor of a non-tuberculous origin are the sudden onset of the meningitic symptoms, the child's liveliness, a history of some preceding infection or the prevalence of epidemic poliomyelitis. Acute encephalitis may induce symptoms of meningitis, subsiding as the encephalitis heals. Aside from this, recovery from meningitis may be anticipated only in case of some of the above curable forms with lymphocytosis.

43. **Recurring Purulent Pleurisy.**—In each of the two cases related there was apparently complete recovery from the pneumococcus pleurisy, but after an interval of two years of health the purulent pleurisy flared up again at the same point. The patients were 4 and 15 at the first attack, and had recovered very slowly under operative measures.

Bulletin de l'Académie de Médecine, Paris

June 3, LXXVII, No. 21, pp. 535-572

44 Operative Separation of Adherent Pericardium. (De la péricardiolyse dans certaines affections cardiaques ou de la thoracectomie prépéricardique.) H. Delagénière.

Journal de Médecine de Bordeaux

May 25, XLIII, No. 21, pp. 323-336

45 Tentative Non-Operative Tuberculin Treatment of Renal Tuberculosis Justifiable Only in Earliest Stages. J. Oraison.
46 Infanticide. (Du dépeçage criminel de l'enfant nouveau-né.) P. Lande.

June 1, No. 22, pp. 337-364

47 The Heart Living Outside of the Organism. (L'automatisme et la réactivité fonctionnelle du cœur en survie.) V. Pachon.
48 Fossil Man. (L'homme fossile.) G. Lalanne.
49 Treatment of Gangrene of the Lungs. Arnozan.

June 8, No. 23, pp. 365-380

50 Treatment of Lateral Curvature of the Spine. (La méthode d'Abbott pour le traitement des scolioses graves.) Codet-Boisse

June 15, No. 24, pp. 383-396

51 Freud's Method of Psycho-Analysis. A. Hesnard.

Lyon Médical, Lyons

May 18, XLV, No. 20, pp. 1061-1116

52 The Ear and Industrial Accidents. (Oreille et accidents du travail.) M. Lannois and M. Jacod.

May 25, No. 21, pp. 1117-1164

53 Pathologic Anatomy of Sclerosis in Patches. L. Bériel.

June 1, No. 22, pp. 1165-1216

54 Extraction of Foreign Bodies from the Eye. (Extraction des corps étrangers intra-oculaires non magnétiques.) Rollet.

June 8, No. 23, pp. 1217-1276

55 *Vertigo in the Tuberculous. C. Lesieur and L. Thévenot.

55. **Vertigo in the Tuberculous.**—Among 100 tuberculous patients examined by Lesieur and Thévenot fifty-five were found to be subject to attacks of vertigo. It seemed to be equally frequent in patients of all ages but more frequent in the early stages of the disease than in the later. It is generally brought on by coughing, but may also be provoked by digestive disturbances, contact with cool air or changes in position. It seems to be due to hyperexcitability of the pneumogastric nerve and its centers, which have become sensitive to the slightest irritation.

Presse Médicale, Paris

June 4, XXI, No. 46, pp. 457-464

56 Electrodiagnosis. (Loi polaire de Pflüger et électrodiagnostic.) H. Cardot and H. Laugier.

June 7, No. 47, pp. 465-476

57 Malformation of the Colon. (La stase colique par déformation des colons.) G. Lardennois.

58 The Adrenals and the Sugar in the Blood. (Capsules surrénales et glycémie.) H. Bierry.

June 11, No. 48, pp. 477-484

59 Laws of Conservation of Energy and Their Application in Chemistry. (L'énergetique générale et la chimie.) H. Guilleminot.

60 Defective Iris. (L'aniridie.) A. Cantonnet and G. Schreiber.

June 14, No. 49, pp. 485-496

61 Diagnosis of Pulmonary Disease by the Pulse. (Le Diagnostic des maladies thoraciques avant l'invention de la percussion et de l'auscultation—Le pouls.) E. Rist.

62 Hypertensive Medication. (Les éléments pharmacologiques essentiels de la médication hypertensive.) A. Martinet.

Revue de Gynécologie, Paris

XX, No. 3, pp. 225-400

63 *Primary Cancer of the Ovary. G. Massabuau and E. Etienne.

63. **Primary Cancer of the Ovary.**—Massabuau and Etienne have compiled 250 cases of solid cancer of the ovary and give a brief summary of each, discussing the outcome of treatment. In 111 of the operative cases, single ovariotomy had a mortality of 24.5 per cent. in forty-nine cases; double ovariotomy 22.22 per cent. in twenty-seven cases, while hysterectomy had only 9.09 per cent. mortality. The patients that died generally succumbed to operative shock. Of the eighty-nine who survived the operation, the fate of fifty-nine is known and all but eleven have died of recurrence. It seems necessary to remove the lymph-nodes in the lumbar region along with the ovarian cancer as they are generally involved. A simple technic for the purpose is described. Recurrence is so constant and so inaccessible that cancer of the ovary must be regarded as one of the epitheliomas with the gravest prognosis. At the same time, the occasional survivals justify radical treatment, and the outlook will certainly grow better with earlier and more extensive treatment.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

May, XXI, No. 5, pp. 129-156

64 Abuse of Hot Vaginal Douches. (De l'emploi abusif et inconsidéré des irrigations vaginales trop chaudes en gynécologie.) R. de Langenhagen.

65 Relations between Ovulation and Menstruation. P. Witas.

66 Syphilis and the Offspring. (Syphilis et nourrisson.) E. Jeanselme.

67 Post-Partum Pyelonephritis. (La pyelonéphrite des suites de couches.) C. Lepoutre.

68 Radiotherapy as Adjuvant to Surgery. S. Fabre.

Semaine Médicale, Paris

June 11, XXXIII, No. 24, pp. 277-288

69 *Diagnosis of Pneumothorax by Syringe Piston. (Nouveau procédé de diagnostic du pneumothorax.) V. Mandru.

69. **Diagnosis of Pneumothorax by Behavior of Syringe Piston.**—Mandru states that with a good aspirating syringe the vacuum in the syringe is changed when the tip is introduced into a cavity containing gas. Instead of the piston's returning to its original position, as occurs under other conditions, the piston is held back by the gas streaming into the syringe. By the immovability of the piston, therefore, it is easy to determine whether the tip of the syringe is in a pneumothorax cavity or not. His experiments with the syringe tip introduced into lung tissue showed that the air from the alveoles of the lung has never force enough to immobilize the piston as with a pneumothorax.

Berliner klinische Wochenschrift

June 9, L, No. 23, pp. 1049-1096

70 *Duodenal Ulcer. H. Küttner.

71 *Calcium in Treatment of Spasmophilia. (Untersuchungen über die therapeutisch wirksame Dosierung von Kalksalzen mit bes. Berücksichtigung der Spasmophilie.) K. Blühdorn.

72 Histologic Changes in the Tissues under Influence of Radiotherapy. (Allgemeine histologische Veränderungen der Gewebe unter dem Einfluss der Strahlenwirkung.) L. Wickham. Commenced in No. 22.

73 Heliotherapy at the Seashore. (Die Sonnenbehandlung der chirurgischen und Bronchialdrüsen-Tuberkulose an der See.) R. and F. Felten-Stoltzenberg.

74 Exercise Treatment of Little's Disease. (Uebungsbehandlung bei Little'scher Krankheit mit Hilfe einer neuen Gehstütze.) C. Hertzell.

75 Radium in Dentistry. (Mitteilungen aus der Zahnheilkunde.) Warnekros.

70. **Duodenal Ulcer.**—Summarized in Berlin Letter in THE JOURNAL May 3, 1913, page 1374.

71. **Dosage of Calcium in Treatment of Spasmophilia.**—Blühdorn reports his attempts in seventeen clinical cases and ten dispensary cases of spasmophilia to determine the most favorable dosage for the calcium salts. He was surprised to find that infants required very large doses, from 4 to 8 gm. calcium chlorid in twenty-four hours at first, the dose then gradually reduced to 2 or 3 gm. The calcium salt in the noncrystallized form proved far more effective than the crystallized. He emphasizes that the action of the calcium salt is symptomatic and transient, so that it must be kept up until all the symptoms of the spasmophilic tendency have permanently subsided except the overexcitability to electric stimuli—this cannot be permanently influenced in this way. In treatment of eczema, asthma and other affections in which benefit from calcium is anticipated, the method of large doses should be given a trial. To disguise the taste of the drug he generally prescribes it in the form of $CaCl_2$ 10 gm.; anisated water of ammonia, 2 gm.; acacia, 1 gm.; saccharin q. s., and water to 200 c.c. Of this mixture 10 c.c. is given six times a day, each dose representing 0.5 gm. $CaCl_2$. He dilutes the mixture to one-half when given by the rectum.

Deutsche medizinische Wochenschrift, Berlin

June 5, XXXIX, No. 23, pp. 1081-1128

76 The Relations between the Antitoxin Content and the Curative Action of Diphtheria Antitoxin. (Beziehungen des Antitoxingehalts des Diphtherieserums zu dessen Heilwert.) R. Kraus and S. Baecher.

77 *Tuberculosis in Children. H. Schelble.

78 Pathogenesis of Tetany in Children. F. Lust.

79 Radio-Active Substances in Treatment of Morbid Conditions in Mouth and Teeth. M. Levy.

80 Paratyphoid B. Knauth.

81 Omentum to Tie Off the Pylorus. (Umschnürung und Verschluss des Pylorus durch Netz.) Momburg.

82 Treatment of Peritonitis. (Die Rehnsche Behandlung der Peritonitis.) K. Propping.

83 Serodiagnosis of Pregnancy. (Zur klinischen Verwertbarkeit der Abderhaldenschen Schwangerschaftsreaktion—Dialysierverfahren.) W. Jonas.

84 Post-Partum Hemorrhage. (Lehren für die Desinfektion in der Geburtshilfe und für die Behandlung der Nachgeburtsblutungen an der Hand von 42 manuellen Plazentarlösungen.) C. Sievert.

85 Inversion of Puerperal Uterus. P. Alsberg.
86 Conception of Causes in Medicine. (Ueber den Ursachenbegriff in der Medizin.) H. Ribbert.

77. **Tuberculosis in Children.**—Schelble discusses the prevalence of tuberculosis in children and the difficulty of diagnosing it when located in bones or lymph-nodes and particularly when it takes the form of a subacute polyarthritis without tonsillitis or endocarditis and rebellious to the salicylates. Incipient tuberculous peritonitis is hard to differentiate from chronic digestive disturbances in children. The swelling of lymph-glands in the neck may be secondary to ordinary inflammatory processes in the mouth, tonsils or back of the neck, and if the child happens to have chronic coryza the trouble is often mislabeled "scrofula." Tuberculous meningitis may occur in infants without any of the characteristic symptoms; the skin reaction is a valuable aid in the diagnosis, as also a greater reducing capacity on the part of the cerebrospinal fluid. If the infant has given previously a positive skin reaction and then it suddenly becomes negative, this is almost a certain sign of fatal tuberculous meningitis. If the tuberculin skin reaction is negative, unless the child has an acute exanthem, the negative reaction indicates either that the child is free from tuberculosis or has been infected too recently for antibodies to have developed, or the infection is so severe that a fatal outcome is imminent. A positive reaction indicates that the child has been infected and has produced antibodies, but not whether there is actually an active tuberculous process. In very young children tuberculous infection is generally synonymous with an active process, but in older children the positive reaction should be weighed with the other findings. No other test can be compared in diagnostic efficiency and harmlessness with the Pirquet skin technic. In regard to the presence of tubercle bacilli in the blood stream, he states that none of his twenty-nine guinea-pigs developed tuberculosis after inoculation with the blood from tuberculous children, even from those with the severest bone or joint lesions. He declares that there is no evidence to date that tuberculin has really helped in the treatment of tuberculosis. Convincing proof would be afforded if it proved possible to cure with tuberculin the open tuberculosis of young children. With all other forms and conditions of tuberculosis there is always a possibility that the lesions might have healed spontaneously without the tuberculin. In tuberculin treatment of children the main point is to avoid the slightest clinically apparent general reaction. This is not an easy matter as different children react differently to the tuberculin, and consequently he advises the general practitioner to leave tuberculin alone in the treatment of children. To get the child out of the sick room, out of the haunts of the germs of influenza and measles, streptococci and pneumococci, is a great step gained, fresh air and time will complete the cure. The various forms of external tuberculosis heal best when given a year or two of time. It is amazing, he remarks, how extensive tuberculous bone processes can heal spontaneously in time. Open sores benefit by exposure to the direct sunlight, but it has little effect on deep-seated lesions. He expatiates on the importance of protecting the child during its first four years of life against bacilli-scatterers; if the bacilli-scatterers cannot be removed from the home the child must be taken away. In conclusion he emphasizes that the prophylaxis against phthisis should be centered on the child at puberty, rather than in early childhood. The main point is to cultivate a well rounded chest and keep the child from debilitating factors, especially too much staying indoors and too little sleep.

Medizinische Klinik, Berlin

June 1, IX, No. 22, pp. 857-894

87 Pain as Symptom of Internal Disease. O. Roth.
88 Influence of Fluctuations in Atmospheric Pressure on the Blood-Pressure. (Einfluss der täglichen Luftdruckschwankungen auf den Blutdruck.) R. Staehelin.
89 Postoperative Infection of Urinary Organs in Women. A. Bauereisen.
90 Dietetic Treatment—Milk and Fresh Strawberries—in Certain Forms of Chronic Diarrhea, Especially Indian Sprue. C. Wegele.
91 Substitutes for "Albumin Milk." (Ueber Eiweissmilch-Ersatzpräparate.) W. Stoeltzner.
92 Hemorrhagic Infarct of the Testicle. (Hämorrhagische Infarcierung des Hodens.) W. Maschke.
93 Glycosuria Masked by Action of Yeast Cells in Urine; Occult Glycosuria. (Melliturie.) L. Boros.
94 Experimental Surgery of the Esophagus. F. Hohmeier and G. Magnus.

June 8, No. 23, pp. 895-938

95 *Dependence of Natural Immunity on the Nourishment. (Die Abhängigkeit der natürlichen Immunität von der Ernährung.) A. Czerny.
96 Present Status of Treatment of Syphilis. W. Pick.
97 Climate and Health Resorts. (Ueber die Grundzüge einer vergleichenden Klimatik der Kurorte.) Frankenhäuser.
98 Invagination of Intestine in Adults from Ascarides or Lipoma. F. Hohmeier.
99 Subdural Hematomas. Bertelsmann.
100 *The Changing Theories in Regard to Dietetic Treatment of Diabetes. (Neuere Gesichtspunkte in der Diätetik des Diabetes mellitus.) B. Tausz.
101 Varices and Pregnancy. R. L. Grünfeld and K. Allmeder. Commenced in No. 22.
102 Technic for Preparing Therapeutic Serums. (Ueber das Samessche Verfahren zur Herstellung eiweissarmer Seren.) W. Nebel.
103 Behavior of the Urea and Residual Nitrogen in the Blood with Nephritis. (Verhalten des Harnstoffs und des Reststickstoffs im Blute von Nephritikern.) R. Philipp.

95. **Influence of the Diet on the Resisting Power to Infections.**—Czerny's article is another illustration of the way in which practical experience leads the way and science follows along, possibly far behind, with the explanation of phenomena observed. With the explanation in hand he says we can now go systematically to work to protect children against infections, when before it was a matter of haphazard empiricism. He shows how important is the natural immunity possessed by the individual in respect to infections, and how it is possible to enhance or reduce this by the diet. The natural immunity of the human organism is its most precious possession, he declares, and it is one of the highest tasks of the medical profession to protect and cultivate further this natural immunity. Conditions in this respect are most easily studied in infants. A healthy infant does not develop thrush even if its mouth is inoculated with oidium, but if digestive disturbances arise, the oidium starts up the thrush at once. Let the digestive disturbance be corrected, and the thrush subsides without any local measures. As the infant grows older, the natural immunity increases, and the oidium does not induce thrush except in much debilitated children. The saying that "the food is responsible for the infant's being sick, but that it dies from infection," must be modified, Czerny insists, by the additional statement that this occurs only with a constitutional inferiority, and that the latter is a factor in the development of the infection by its depressing influence on the natural immunity.

He discusses the different elements of the food in relation to natural immunity, the fat, carbohydrates, etc., and emphasizes that the water content of the body has extreme importance for the natural immunity. Bacteria flourish in culture mediums more luxuriantly in direct proportion to the measure in which the water content of the medium surpasses the average water content of the body of an adult. With a water content merely equal to this average or below, no colonies of the bacteria develop. The higher the water content of the body, the less the resisting power to infection, he reiterates. Carbohydrates in the diet tend to increase the water content of the tissues; the amount of increase depends on individual conditions, so that some infants and older children have to have the intake of carbohydrates more strictly regulated than others. The embryo and new-born infant have a larger water content than older children and adults, and the experiences with them illustrate forcibly the special danger of this high water content. They not only contract infections with exceptional facility, but the infection rapidly spreads from a local to a generalized process. Tubercle bacilli induce in young infants almost invariably a generalized active disease while infection as the child grows older is usually a local process.

Another factor of importance for natural immunity is the swelling of the colloid substances in the tissues; under normal

conditions the calcium salts have an inhibiting and regulating influence on this swelling. If the absorption of the calcium salts from the food is prevented by too much fat in the food, then they are thrown off in the form of soaps in the stools, and the infant suffers from lack of the necessary calcium salts. This is most liable to occur on a cow's milk diet, both in infants and in older children fed too long on milk. The loss of the alkalies in this way leads to acid intoxication, the more readily the younger the child. The natural immunity is lower on a cow's milk diet than on any other food. With the exudative diathesis, in particular, the exceptionally low natural immunity can be enhanced to a practically normal phase by simply modifying the diet, reducing the milk after the first year of life to the proportion of milk usually taken by adults. His twenty years' study of the subject has shown that it is possible to control the exudative diathesis effectually by a proper diet, and thus to control the tendency to infection, so that the children very rarely contract scarlet fever, and when it occurs it is in an attenuated form. He even affirms that the frequency of the occurrence of scarlet fever and the seriousness of the disease are, generally speaking, a mirror to reflect the conditions as to the suitable or unsuitable diet given the children. The exudative diathesis, he reiterates, is a sharply defined condition of certain exudative and consecutive infectious processes in the skin and mucous membranes which are directly dependent on the diet and can be controlled at will by modifying the food, reducing the intake of milk and of fluids in general to the amounts generally taken by adults, and giving the children in their diet certain substances which they need. Experience has shown that these latter substances can be supplied to infants in maltose and to older children in meat. The recent research on beriberi has demonstrated that even minimal amounts of certain substances in the food may have a wonderful effect on the general health. In conclusion Czerny urges that some of the research now being devoted to active and passive immunization should be diverted to study of the factors governing natural immunity, especially the alimentary factors.

100. **The Changing Views in Regard to Diabetes.**—Tausz comments on the importance of determining the tolerance for albumin as well as for carbohydrates in each individual case of diabetes and, in the renal form, the tolerance for sodium chlorid also, regulating the diet in the latter case for nephritis as well as for diabetes. He is inclined to regard the success of oatmeal and vegetable days as due to their alkali content; this neutralizes the tendency to acidosis. The kations introduced with this diet have a higher catalytic power on the special ferments. He thinks that it will yet be possible to increase the production of the ferments in some way, or at least to mobilize them. The possibility of this is suggested by some certain recent experimental work; for instance, cane sugar added to dog serum remains unmodified, but if the dog a certain time before had been given an intravenous injection of 10 c.c. of a 5 per cent. solution of cane sugar, then when the sugar is added to the serum it is promptly split. This confirms the assumption that the body is able to produce protective ferments against carbohydrates, and may be led to do so at will.

Monatsschrift für Kinderheilkunde, Berlin

July, XII, No. 3, pp. 59-100

104 *Scarlet Fever and the Ear. (Scharlach und Ohr.) P. Manasse.
105 Tubercle Bacilli in the Blood of Children. (Ueber intravitale bakteriologische Blutuntersuchungen bei Kindern.) M. Kretschmer.
106 Opium in Treatment of Children. (Verwendung von Opiaten im Kindesalter.) S. Wolff.
107 Contact Paratyphoid Infection in a Breast-Fed Infant. K. Blühdorn.
108 *Relations between Orthostatic Albuminuria and Tuberculosis. P. Reyher.

104. **The Ear in Scarlet Fever.**—Manasse expatiates on the frequency with which the ear is affected in scarlet fever. Holmgren collected a material of about 10,000 cases in ten years and among them 21.06 per cent. had ear disease. There are two forms of scarlatinal otitis. The first is a comparatively mild ordinary inflammation and has no relation to the scarlet fever except that it occurs at the same time. It is most frequent in cases with little or no throat trouble. The second type is the so-called scarlatino-diphtheritic or necrotic otitis, and is brought about by the same specific cause as the scarlet fever itself. It differs from the first type in being very much more severe and involving extensive necrosis of the soft parts and bones. While the first type generally recovers without disturbance of hearing, the second frequently becomes chronic and practically always causes some defect in hearing and often complete deafness. In order to prevent the inflammation extending from the throat to the ear, the throat should be given the greatest care. Gargles of hydrogen peroxid and similar substances are recommended and also spraying with solutions of menthol in oil. When the ear is affected, instillations of 20 per cent. boroglycerin and insufflations of boric acid are helpful or the introduction of a bit of sterile gauze into the perforation, after thorough cleansing of the middle ear. If the process involves the petrous portion, with ostitis or peri-ostitis and abscess formation, operation becomes necessary, but Manasee warns against performing an operation during the course of the scarlet fever unless it is absolutely necessary because of threatened meningitis or other intracranial complication. The inflammation may extend to the labyrinth with destruction of hearing or loss of equilibrium. Conservative treatment is advised here in preference to operation. The auditory nerve may be affected, with or without involvement of the labyrinth and middle ear. The importance of careful attention to the ear in all cases of scarlet fever is reiterated again and again.

108. **Orthostatic Albuminuria and Tuberculosis.**—Reyher believes that tuberculosis is the most important factor in the production of orthostatic albuminuria. He gives briefly the histories of twenty cases of orthostatic albuminuria in the majority of which the temperature curve, the tuberculin reaction and the roentgen examination showed tuberculosis. He cites the work that has been done showing the association of lordosis with orthostatic albuminuria; it is his impression that the albuminuria is due not to the lordosis but to the tuberculosis which caused it. His conclusions are confirmed by Lüdke and Sturm, who in 140 cases of tuberculosis in adults found 72 per cent. with orthostatic albuminuria. The percentage is larger in the first stage than in the later ones, and seems to increase after the administration of tuberculin.

Münchener medizinische Wochenschrift

June 3, LX, No. 22, pp. 1185-1240

109 *Mesothorium in Gynecology. Voigts.
110 *Hypotonicity of the Eyes in Coma. (Ueber die Verminderung des Augendrucks beim Coma diabeticum.) E. Hertel.
111 Increased Pressure in Cerebrospinal Fluid after Salvarsan. (Ueber die Hirndruckerhöhung bei Lues nach Salvarsan.) B. Spiethoff.
112 Serodiagnosis of Pregnancy (Beeinflussung des Hämoglobinkatalysators in der Schwangerschaft—Weichardtsche Reaktion.) E. Engelhorn.
113 Serodiagnosis in Psychiatry. (Serodiagnostik nach Abderhalden in der Psychiatrie.) Wegener.
114 Serodiagnosis for Differentiation of Tumors, Etc. (Ist das Dialysierverfahren Abderhaldens differentialdiagnostisch verwertbar?) E. Schiff.
115 Powder Technic for Serodiagnosis of Pregnancy. (Ueber trockenes Plazentapulver und seine Anwendung bei dem Abderhaldenschen Dialysierverfahren bezüglich der Diagnose der Schwangerschaft.) V. L. King.
116 Regeneration of Blood under Iron. (Zur Blutregeneration bei Eisenverabreichung.) R. Schmincke.
117 *Alcoholic Reflex Pupil Phenomena. R. Mees.
118 Nitrite Poisoning from Bismuth Paste. T. Jensen.
119 Diagnosis of Measles from the Blood. G. Schwaer.
120 Causes of Intestinal Invagination. L. Treplin.
121 Glattölin Used to Rub Edge of Collar as Cause of Dermatitis. J. Kohn.
122 *Clinical Importance of Lymphocytosis in Asthenia and Nervous Disease. R. v. Hoesslin. Commenced in No. 21.
123 *Emetin in Ameba Dysentery. G. Baermann and H. Heinemann. Commenced in No. 21.

109. **The New Era of Intensive Dosage in Radiotherapy in Gynecology.**—Voigts reports his experience with mesothorium, a radio-active substance similar in its properties to radium

but far cheaper, as it is derived from the monacite sand imported from Brazil to make Welsbach mantles. Its rays seem to have a greater penetrating power than the roentgen rays while it has more of the alpha and beta rays. The mesothorium rays are filtered through lead or silver 0.5 to 1 mm. thick. A twelve-hour exposure is the general rule with forty-eight-hour intervals. The mesothorium in a silver tube is introduced into the vagina or uterus or both, and the convenience of the application directly at the site of the trouble renders it a useful substitute for roentgenotherapy. No changes were found in the sound tissues suggesting permanent injury from the radiation after the present technic of filtration had been adopted. Voigts reports seven cases of climacteric hemorrhage, all promptly cured, as also three patients with hemorrhage from diseased adnexa; in six cases of metritic hemorrhage the patients were cured although with some difficulty. No benefit was realized in two of the eight cases of myoma. In his first three cases an unduly long exposure without suitable filter led to a deep burn in the vagina that took three months to heal. The exposure induced collapse in another case, and in another there was exudation in the pouch of Douglas.

110. **Reduction in the Intra-Ocular Pressure in Diabetic Coma.**—Hertel has succeeded in causing a marked reduction in the intra-ocular pressure in animals by varying the food and by intravenous injection of various substances which modified the molecular concentration of the blood. This remarkable change in the intra-ocular pressure is independent of the general blood-pressure, and it can be due only to changes in the processes of osmosis. The research was undertaken to seek an explanation for the remarkable drop in intra-ocular pressure in the course of diabetic coma to which Krause and Heine called attention and suggested its differential importance in coma of different origins.

117. **Alcoholic Reflex Pupil Phenomena.**—Mees reports a case which shows that abuse of alcohol may induce a syndrome deceptively simulating tabes dorsalis, even to the reflex behavior of the pupils. Serodiagnosis may be the only means to distinguish between true tabes and this alcoholic pseudo-tabes. He is convinced that the oftener the serum tests are applied the more numerous will become the cases of pure alcohol reflex rigidity of the pupil. The importance of differentiation for treatment is obvious, and it confirms anew the frequent practical importance of many questions at first supposed to be of purely abstract scientific nature.

122. **Lymphocytosis as an Index of the Lymphatic Constitution.**—Hoesslin has been classifying all his cases in the last two years in which there was manifest lymphocytosis, restricting this term to the fields in which there were thirty or more lymphocytes to each 100 leukocytes. He found 100 patients with this lymphocytosis, absolute in seventy-one cases, that is, with more than 2,000 lymphocytes to the cubic millimeter. The blood findings were kept under frequent control; when there was no treatment the lymphocytosis usually persisted unmodified during months. This high lymphocytosis occurred almost exclusively in patients with diabetes, obesity, exophthalmic goiter, neuropathies, asthenia or various neuroses. Analysis of the cases demonstrated that the lymphocytosis is a manifestation of functional disturbance in the lymphatic system, chiefly of the thymus and the ductless glands. His research indicates further that asthenia and other affections of the nervous system are directly traceable to the lymphatic constitution or the status thymicolymphaticus with involvement of the glands with an internal secretion. There seems to be an inherited constitutional inferiority on the part of the glands with an internal secretion. This conception throws light on the connection between the various diatheses. He remarks in conclusion that the favorable action of arsenic in many neuropathic conditions is due to its influence on the lymphatic system, combating the neutrophile leukopeny and the lymphocytosis. One argument in favor of this view is the inefficacy of iron in the so-called pseudo-anemia of the neuropathic, in which arsenic is often surprisingly successful. The lymphocytosis persists unmodified by the iron while under arsenic conditions return to approximately normal. This revolutionary conception that neuropathic conditions are not the result of a primary affection of the nervous system but rather of the lymphatic system brings a revolution in treatment, as our measures henceforth will be directed against the abnormal functioning of the glands with an internal secretion and the lymphatic system in general.

123. **Emetin in Amebic Dysentery.**—Baermann writes from Sumatra to extol the efficacy of emetin in treatment of amebic dysentery as he has used it in twenty-two cases. In six cases the old dysentery had induced such irreparable changes in the mucosa of the colon and such impairment of the general health that it was impossible to arrest the fatal termination, but the autopsy revealed that the processes in the intestines must have started to heal at once under the emetin, as the ulcerations, etc., were either entirely healed or well on the way toward healing, and in three cases no amebas could be discovered. In three others an occasional, isolated ameba was found. In the clinically cured cases also an occasional ameba is passed in the stool; probably these surviving amebas were ensconced at some point not accessible to the blood-stream and the amebas thus escaped the action of the emetin, or they may belong to a strain refractory to emetin. It was found most effectual in one or two intravenous or subcutaneous injections of 150 or 200 mg., followed by four or five subcutaneous injections of 100 or 120 mg. at two or three day intervals. This supplementary course should be repeated at intervals of three or four weeks. Supervision of the stools is indispensable, kept up for months. The intravenous maximal dose is 250 mg. per 60 kg. body weight. Different lots of emetin varied in their efficacy. The rapid improvement in the first two or three days must be due to the astringent action of the emetin, as the ulcerations cannot heal in this time. The results on the whole were less brilliant than those of Rogers—even with emetin obtained directly from him.

Petersburger medizinische Zeitschrift

May 28, XXXVIII, No. 10, pp. 112-127

124 Recent Progress in Treatment of Cancer. (Fortschritte der Krebsbehandlung.) F. Weber.
125 Treatment of Ozena. (Zur Ozaenafrage.) W. v. Reyher.

Therapie der Gegenwart, Berlin

June, LIV, No. 6, pp. 241-288

126 *Present Status of Hyperemia Treatment. E. Joseph.
127 *Vaccine Therapy of Cancer. (Behandlung von Krebskranken mit Vaccination.) C. Lewin.
128 Treatment of Contracted Flat-Foot. (Zur Behandlung des contracten Plattfusses.) G. Müller.

126. **Present Status of Hyperemia Treatment.**—Joseph remarks that the poultice, the hot sand bag and similar long-tried measures owe their efficacy to the hyperemia which they induce and the benefit is proportional to the way in which they conform to the principles which Bier has found the secret of success in his methods of passive and active hyperemia treatment. The hyperemia has a curative influence only when it is the local concentration of healthy blood; hence measures to improve the state of the blood as a whole may be included in the term "hyperemia treatment." Joseph discusses the technic for the various methods of inducing hyperemia, reiterating that the limb to which the constricting band is applied to induce local hyperemia must always feel as warm, if not warmer, than its mate. If the limb grows cold this is a sign that the blood is being shut off from the limb instead of collecting in it, and thus the opposite of the desired effect is realized. With small, peripheral infectious processes it is sometimes better to apply a second constricting band close to the lesion, in addition to the one higher up on the limb, as the hyperemia induced by the latter grows less and less toward the periphery so that the lesion may escape its effect unless reenforced by a second, looser, constricting band closer to it. [The technic has been described in these columns a number of times, as 1910, lv, 25 and 1908, l, 840.] The earlier the hyperemia treatment is begun the

better the outcome. In constitutional diseases the blood as a whole is so poor that little can be hoped from it; with nephritis it is liable to increase the tendency to dropsy. Mild diabetes is not a contra-indication, but diabetic furuncles and carbuncles require great caution. The suction cup should be large enough to rest everywhere on sound tissue. Here as in all cases, the suction must never be strong enough to aspirate blood. Arteriosclerosis as a rule need not be regarded as a contra-indication, but nervous diseases, tabes, alcoholism, etc., render the application of hyperemia treatment extremely difficult as the disturbances in sensation deprive us of this useful guide. When the blood has been injured beyond repair by sepsis, hyperemia treatment is hopeless, but a sudden transient invasion of the blood and comparatively benign pyemic metastases are exceptionally amenable to it. Pyemic joint affections are the banner field for it, Joseph declares. He regards the appetite and ability to sleep as the only means at our disposal to differentiate between the hopeless and the favorable types of sepsis. The fever may be alike in both forms. The finding of streptococci or staphylococci in the freshly voided urine suggests metastatic pus foci in the kidney, but even then the hyperemia technic may be applied for a brief trial. If the proper reaction, namely, warm edema, does not follow, the attempt had better be abandoned at once, as also under any conditions when there is progressive necrosis. Hyperemia treatment requires skill and patience and it should not be attempted for insignificant lesions which heal without it. But it far surpasses all other methods, he insists, in treatment of recent joint affections of gonorrheal origin and for all recent, severe, infected or suspicious injuries and wounds. No physician skilled in the technic would be willing to do without it now in treatment of tendon sheath phlegmons, mastitis, furuncles on the face, and carbuncles, etc. Tuberculous lesions may require it to be kept up for years to be finally successful, and consequently it is foolish to commence it with persons who are unable to devote the necessary time to it. For tuberculous joint lesions the constricting band should be applied for two hours a day, drawn just tight enough to induce considerable edema, with possibly a slight livid aspect of the limb. No pain should ever be caused by the constriction; the prompt relief of existing pain is one of the great advantages of the method. Tuberculous abscesses should be punctured and the contents aspirated with a vacuum cup, suction hyperemia being maintained in this way, with intermissions, up to a total of thirty minutes a day, until the abscess has entirely healed over; the constricting band for passive hyperemia can be continued at the same time for two hours a day. The method is best adapted for the hand, foot and elbow; the shoulder is less favorable for it and it cannot be applied to the hip joint at all. Lesions in the testicles and epididymis are also amenable to this treatment. In conclusion Joseph endorses Bier's recent statements in regard to the great advantage of giving internally from 1 to 8 gm. of sodium iodid a day to supplement the local hyperemia. This wards off development of cold abscesses.

127. **Autoserotherapy of Cancer.**—Lewin has only two cases to report, but the results were so extraordinarily good with these that he urges others to treat patients with ascites from carcinosis by reinjection of 10 c.c. of their own ascitic fluid after tapping. One of his patients, a woman of 57, seemed to have less than a month to live when he first saw her, but under this autoserotherapy she was apparently cured and survived in comparatively good health for eighteen months after her dismissal. First one breast and then the other had had to be amputated for recurring carcinoma and during the three months following she had to be tapped a number of times. Each time 10 c.c. of the fluid was reinjected into the subcutaneous tissue before the needle was withdrawn The other patient was a woman of 46 with metastatic nodules in the remaining breast. She was given five injections of 10 c.c. each of an autolysate of cancer cells, supplemented by potassium iodid (on account of the positive Wassermann reaction). The recurring nodules gradually disappeared so that the woman for a year has been comparatively well to date. Lewin thinks that there is a future for this autoserotherapy or autovaccination, especially as an adjuvant to radiotherapy or other measures.

Wiener klinische Wochenschrift, Vienna

June 5, XXVI, No. 23, pp. 917-960

129 Simplicity in First Aid. (Grundzüge und Vorschläge zur Vereinheitlichung des ersten Wundverbandes.) A. v. Eiselsberg.
130 Reliability of Serodiagnosis of Pregnancy. (Zur Serodiagnostik der Schwangerschaft.) K. Jaworski and Z. Szymanowski.
131 Salvarsan Fever. (Experimentelle und klinische Analyse des Salvarsanfiebers.) F. Luithlen and V. Mucha.
132 Phimosis. (Operation der hypertrophischen Phimose.) P. Albrecht.
133 Successful Operation for Embolus in Femoral Artery. E. Key.
134 Treatment of Abortions in Vienna Hospitals. (Poliklinische Abortusbehandlung.) E. Hofmokl.

Zeitschrift für Kinderheilhunde, Berlin

VIII, No. 1, pp. 1-110. Last indexed July 12, p. 158

135 *Dietetic Treatment of Eczema in Children. H. Finkelstein.
136 Test for Human Milk. (Neue Methode zur Unterscheidung von Frauenmilch zum Studium des lipolytischen Milchfermentes.) H. Davidsohn.
137 The Phosphates in the Urine of Bottle-Fed Infants. G. Kaminer and E. Mayerhofer.
138 Fluctuations in Albumin Content and Electric Conductibility of Infants' Blood. O. Hagner.
139 Agglutination of Colon Bacilli Has No Diagnostic Significance in Infant Pathology. H. Zeiss.
140 Post-Diphtheric Hemiplegia. W. L. Leede.

135. **Dietetic Treatment of Eczema in Infants and Older Children.**—Pediatrists formerly held that eczema was almost always benefited by a restricted diet. Finkelstein believes that this is a mistake, and that there are many cases in which restriction in diet is not only not helpful, but directly harmful. He reports two cases showing bad results under limited diet and improvement on a more generous diet.

Zeitschrift für klinische Medizin, Berlin

LXXVII, Nos. 5-6, pp. 355-533. Last indexed May 31, p. 1753

141 Aspect of First Beginnings of Incipient Cancer in Lower Intestine. (Die ersten Anfänge der atypischen Neubildung im Rektum und im S Romanum.) W. Libensky.
142 Diabetes. (Zur Diabetesfrage.) H. Pribram and J. Löwy.
143 Affinity of Thorium for Organs. (Zur Kenntnis der Organotropie von Thorium X und Thorium B.) W. Metzener.
144 Biologic Research on Thorium. (Experimentelle Untersuchungen über die biologische Wirkung des Thorium X, nebst Beobachtungen über seinen Einfluss auf Tier- und Menschentumoren.) H. Hirschfeld and S. Meidner.
145 Physical Examination of Athletes in Competitive Events. (Untersuchungen an Sportsleuten.) Külbs and M. Brustmann.
146 The Carbon Dioxid Tension of the Blood in Dyspnea of Cardiac or Pulmonary Origin and in Kidney Disease. (Ueber die Kohlensäurespannung des Blutes im pathologischen Zuständen. II and III.) O. Porges, A. Leimdörfer and E. Markovici.
147 *Treatment of Obesity from Standpoint of Metabolism of Minerals. (Untersuchungen über den Mineralstoffwechsel. I.) K. Birkner and R. Berg.

147. **Treatment of Obesity from Standpoint of Metabolism of Minerals.**—Birkner and Berg conclude their long monograph with the statement that in treatment of obesity, far more than under normal conditions, it is necessary for the food to contain a natural surplus of inorganic bases over inorganic acids. Unless this is the case, the patients' resisting powers will be materially reduced, the heart and circulation suffering most. The minute details of the entire mineral metabolism in several cases of obesity are tabulated for comparison with the minute details of the diet. They illustrate the importance of such apparent trifles as the eating of 14 gm. less meat a day in one case; this was enough to upset the balance between the bases and acids. When there is an excessive intake of acids and the emunctories can or do not throw them off at once, they seem to become transformed into amino compounds and are stored up somewhere in the body. When the diet becomes rational again, these stored-up deposits are thrown off, but it may be some time before they are all eliminated. Any attempt to neutralize these stored up acids by ingestion of bases is dangerous, as the trouble is

not the lack of bases, but in the impossibility of the intestines and kidneys eliminating such large amounts of the big molecule compounds. The food should contain more equivalents of inorganic bases than acids. A surplus of bases is found in fruits, nuts, milk, etc.; a surplus of acids is found in meat, bread, beans, etc. The tables show that 100 gm. of the acid-carriers requires 200 or 300 gm. of the base-carriers to balance. These fundamental laws must be taken into account in treatment of obesity, at least, or the patient's heart and general health will suffer materially as is shown by concrete examples.

Zeitschrift für Urologie, Berlin

July, VII, No. 6, pp. 429-534

148 *Supernumerary Ureters. (Zur Kasuistik und operativen Behandlung überzähliger aberranter Ureteren.) J. Hartmann.
149 *Staphylococcus Infection of the Urinary Passages. (Die Sonderstellung der Staphylomykosen der Harnwege.) B. Goldberg.
150 Case of General Gonorrheal Infection. (Muskelatrophie, Muskelrheumatismus, Arthritis, Keratosis der Fussohlen bei einem gonorrhöischen Patienten.) I. F. Selenew.

148. **Supernumerary Ureters.**—Hartmann reports a case which brings to twenty or twenty-five the total on record. The symptoms caused by a supernumerary and aberrant ureter are a typical incontinence coexisting with normal micturition, although incontinence is not inevitable in these cases. Some of the patients had been treated in various ways to cure their "bad habit of enuresis"; others were treated for weakness of the sphincters. In one case, only the microscope revealed the minute opening below the urethra through which the droplets of urine oozed. Hartmann's patient was a robust primipara of 33 who had been treated for her incontinence by various physicians since early childhood; none before had discovered the hair-fine opening close below the orifice of the urethra. A stain injected into the minute fistula did not tint the urine in the bladder, and an incision in the vagina showed that the ureter ran to the right kidney. He cut out the lower dilated segment and implanted the central stump of the ureter in the bladder wall, by Franz' method, restoring approximately normal conditions.

149. **Staphylococcus Infection of the Urinary Apparatus.**—Goldberg comments on the easy curability of staphylococcus infection of the urinary passages, and hence its brief duration as a rule. Chronic staphylococcus infection is rare; when it occurs it is generally secondary to a chronic excessive proportion of phosphates in the urine. Albuminuria is generally the first and a persisting sign of staphylococcus infection. After gonorrhea, all forms of staphylococcus infection are liable to develop. If the staphylococci in the urinary passages invade the kidneys and blood, the resulting sepsis is peculiarly dangerous, as he shows by summaries of seven cases. Otten had 80 per cent. of his twenty-two patients in this category die, and Bertelsmann had a mortality of 70 per cent. Goldberg compares ten cases of staphylococcus infection of the urinary passages from his own experience with a large number on record. His first four cases began with a sudden onset; tenesmus and pain at micturition, the desire to urinate returning every fifteen minutes, the urine scanty and turbid, containing epithelial cells, cocci, and up to two per thousand albumin. Under prompt internal and local treatment, the cure was soon complete.

Zentralblatt für Chirurgie, Leipsic

June 14, XL, No. 24, pp. 945-992

151 Technic for Steinmann's Nail Extension. D. Kulenkampff.
152 Amputation of Rectum with Exclusion of Pelvic Colon. G. Kelling.
153 Fascia Flap as Cap in Resection of the Liver. (Ein neues Verfahren für ausgedehnte Leberresektionen mit Anwendung der freien Fascientransplantation.) P. Kornew and W. Schaack.

Zentralblatt für Gynäkologie, Leipsic

June 14, XXXVII, No. 24, pp. 877-916

154 Repeated Extra-Uterine Pregnancy. L. v. Lingen.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 22, XXXIV, No. 61, pp. 639-646

155 Edema of the Lids as Sign of Maxillary Sinusitis, etc. (L'edema delle palpebre.) G. Di Tito.

June 1, No. 65, pp. 679-694

156 Changes in the Blood of Gravid Rabbits. (Alcune osservazioni ematologiche su coniglie gravide.) A. Rossi.

June 3, No. 66, pp. 695-702

157 Transvesical Prostatectomy; Nine Cases. (Guarigione secondaria immediata della cistotomia prostatectomia transvescicale.) G. Giovannetti.

June 5, No. 67, pp. 703-710

158 Operative Treatment of Abortion. F. Marinelli.

June 8, No. 68, pp. 711-726

159 "Determining" Action of Certain Crystalloid Substances. N. Barbaro.

June 10, No. 69, pp. 727-734

160 Serodiagnosis of Pregnancy. G. A. Pari.

June 12, No. 70, pp. 735-742

161 Ileus from Volvulus in Hernia. (Sull'occlusione intestinale da volvolo in sacco erniario.) G. Marangoni.

Policlinico, Rome

June 8, XX, No. 23, pp. 805-840

162 *Etiology of Pellagra. (Contributo nuovo alla etiologia e patogenesi della pellagra.) G. Alessandrini and A. Scala.

June, Surgical Section No. 6, pp. 241-288

163 Localization of Foreign Bodies by Roentgenoscopy. (Sull'esatta posizione dei corpi estranei nel corpo umano. Nota die Röntgen-tecnica.) I. Schincaglia.
164 Invagination of the Intestine. L. Vaccari.
165 The Internal Secretion of the Testicles. (Ulteriori ricerche sulla secrezione interna testicolare.) A. Marrassini.

June, Medical Section No. 6, pp. 243-288

166 Serotherapy of Anemia with Serum Taken after Venesection. (Il valore ematopoietico del siero di animali anemizzati col salasso.) R. Massalongo and U. Gasperini.
167 Electricity in Treatment of Chlorosis. (Azione curativa della elettricita statica nella clorosi.) F. Ghilarducci.
168 The Resisting Powers of the Red Corpuscles in Anemia and Jaundice. (La resistenza delle emazie negli stati anemici e itterici.) G. Paoloni.
169 Serodiagnosis of Cancer. (Del valore della deviazione del complemento secondo v. Dungern nella diagnosi delle neoformazioni maligne.) B. E. Anselmi.

162. **Pellagra the Result of Chronic Intoxication from Drinking Water.**—Alessandrini and Scala have abandoned the idea that pellagra is of parasitic origin, and relate here that extensive experiments on rabbits, guinea-pigs, dogs and monkeys, conducted at the Institute of Experimental Hygiene at Rome, have apparently confirmed the assumption that the silica in colloidal solution in the drinking water is the cause of pellagra. All drinking waters contain more or less silica, but it is neutralized by the alkaline salts present in the water, and only where the salts are not present in adequate amounts is there danger of pellagra. In their experiments, sodium and calcium carbonates preserved the animals from any injurious influence from the colloidal silica while calcium chlorid aggravated the injurious influence. The silica exerts its nefarious action mainly, they state, by causing the fixation of sodium chlorid in the tissues. This in turn leads to excessive amounts of free hydrochloric acid. This induces reactions of defense which cause the symptoms we call pellagra. This disease is consequently, they affirm, an intoxication with mineral acids. The symptoms are the manifestation of the reactions between the retained sodium chlorid and the proteic elements of the tissues. The action of the mineral acids is most intense on the tissues exposed to the sun and air. The practical results of the research reported are the assumption that pellagra can be prevented and favorably influenced by treatment with an alkali. They gave nine pellagrins daily injections of a 5 or 10 per cent. solution of trisodium citrate and the results were highly satisfactory. All had the disease in a pronounced and old, chronic form and all gained in weight and strength while there were no further digestive disturbances or dizziness although no change was made in their habits of life, food or occupation. Dogs treated in the same manner, after the experimental pellagra was under way, recovered apparently normal health, the urine

returning to normal in sixteen days. Alessandrini and Scala suggest that the addition of minute pebbles of calcium carbonate to the sources of the water in pellagra districts would restore the proper balance and put an end to the excess of colloidal silica. This measure has already been applied empirically in some districts with excellent results, small limestone pebbles being used as a filter for the water without knowledge of the specific chemical action of the calcium carbonate on the silica.

Riforma Medica, Naples

May 24, XXIX, No. 21, pp. 561-588

170 Reflex Phenomena with Spinal Cord Disease. (Riflesso di retrazione dell'arto inferiore e riflesso di allungamento crociato.) G. Rosenda.
171 Epitheliomas of Male Mamma; Four Cases. V. Simeoni. Commenced in No. 20.
172 Colpocystotomy. O. Marchetti.

May 31, No. 22, pp. 589-616

173 Previously Undescribed Gland in Thymus Region with an Internal Secretion. (Sull'esistanza di una nuova glandola a secrezione interna.) N. Pende.
174 Tuberculous Processes in the Cecum. (Sulla tubercolosi ipertrofica del cieco.) G. Monzardo.
175 Bradycardia in Mumps. (Sul polso raro nella parotite epidemica.) E. Grande.

Brazil-Medico, Rio de Janeiro

May 8, XXVII, No. 18, pp. 171-180

176 Madura Foot; Two Cases. J. Maciel and N. Leite.
177 Gonorrheal Joint Disease. (Nota sobre o rheumatismo blenorrhagico.) A. Pereira.

May 15, No. 19, pp. 181-190

178 Diagnosis by the Blood in Tropical Diseases. (Hemodiagnostico nos tropicos.) J. A. G. Froes. Commenced in No. 18.

May 22, No. 20, pp. 191-202

179 *Epidemic of Attenuated Small-Pox? (Epidemia de alastrim no municipio de Ponte Nova.) P. Palermo.

179. **Attenuated Small-Pox?**—Palermo describes an epidemic of what he calls "alastrim." This term is derived from the Portuguese word meaning "to spread," as the way in which this disease spreads seems to be its most remarkable feature. Last August it invaded the town of Ponte Nova, appearing at several points at once and sweeping like a prairie fire from the outskirts toward the center, but not invading the center, that is, the homes of the well-to-do. Before long there were 3,000 cases; the eruption resembled in nearly every respect that of small-pox except that the pustules developed in various crops. The disease was never known in the region until three or four years ago, when there were a few cases. He describes the disease as the most benign of all the infectious diseases as there was not a death due directly to it and the general health was scarcely impaired. Although covered with confluent pustules many of the sick continued at their ordinary occupations. Palermo gives a number of reasons why the disease cannot be regarded as merely an attenuated form of small-pox but is in fact a distinct morbid entity. There was no fever except in a few rare cases during the suppuration stage, and then the fever was slight and brief, never proportional to the intensity of the eruption. The disease leaves pitting, and vaccination against small-pox protects against alastrim. He states that in Rio in 1908 the alastrim appeared in epidemic form along with variola. Another argument against the identity of alastrim and variola is that the alastrim renders the individual non-susceptible to vaccination for only a very short period. The disease has never appeared except in the winter season, and the epidemics have been arrested only by wholesale vaccination. He gives illustrations and temperature charts in several cases.

Semana Medica, Buenos Aires

April 24, XX, No. 17, pp. 965-1020

180 Gradual Dilatation up to Large Catheters in Treatment of Dacryocystitis. J. M. Zubizarreta.
181 Artificial Plasmogenesis. V. Delfino.
182 Sulphuric Acid. (Apuntes de quimica.) V. Delfino.
183 *Cesarean Section by Small Supra-Umbilical Median Incision. (La operacion cesarea por el metodo del Doctor A. B. Davis.) S. G. Marruz.

May 1, No. 18, pp. 1021-1076

184 *Tuberculin Treatment of Pulmonary Tuberculosis. S. E. Bermann.
185 Composition of Matter. (Las modernas ideas ac[illegible]e la constitucion de la materia.) V. Delfino.
186 Medicolegal Examination of Blood-Stains. (La diascopia de las huellas de sangre.) A. de Dominicis.

May 8, No. 19, pp. 1077-1132

187 *Influence of Mountain Climate on the Blood. (La hiperglobulia de las altitudes no es un fenomeno de hematopoyesis.) D. V. Lope.
188 The Granules in the Tubercle Bacilli. (Algunas granulaciones del bacilo de la tuberculosis revelables por el metodo de Romanowsky-Giemsa.) F. Mas.

183. **Davis' Technic for Cesarean Section.**—Marruz calls the attention of his South American confrères to the fine results obtained at the New York Lying-In Hospital since A. B. Davis in 1903 adopted the method of a small incision above the umbilicus on the median line for access to the uterus. This technic was applied with excellent results in 135 of the 147 cases of cesarean section between 1903 and 1912. The cicatrix ruptured later in only one case, during a protracted delivery, and a second prompt cesarean section brought both woman and child out of danger. He expatiates on the avantages of this technic, especially the distance between the wound in the wall of the abdomen and in the wall of the uterus, each thus healing separately without danger of adhesions, and without interfering with the normal involution of the uterus. As no attempt is made to bring the uterus outside, the danger of shock is correspondingly lessened, as also the hemorrhage; the woman sometimes loses less blood than with an ordinary delivery. The tendency to hemorrhage is counteracted by the traction from above in extracting the child.

184. **Tuberculin Treatment of Pulmonary Tuberculosis.**—Bermann gives a detailed report of seven typical cases in which tuberculin was systematically used, emphasizing the important aid it afforded when the system was still capable of the slight stimulating reaction which alone renders tuberculin effectual. He advises not to permit any evident clinical reaction, keeping the doses, concentration and intervals at the point below that of inducing a clinical reaction. The tuberculin is most effectual in the incipient cases and in those with a torpid evolution or standing still, without fever, and the general condition still good. There need be no fear of untoward by-effects in these classes of cases. It is of great assistance to have the patient prepared by a course of hygiene and dieting before starting the tuberculin; the best results are attained when the patient can have the benefit of sanatorium treatment with the tuberculin; when this is not possible the physician must be stricter in picking out cases in which to give the patient the benefit of the tuberculin.

187. **Effect of Mountain Climate on the Blood.**—Vergara Lope quotes from a number of writers and cites his own experiences, all of which seem to show that the dry rarefied air of the mountains dries out the blood so that the apparent increase in the number of corpuscles is merely a matter of greater concentration; there is no special production of blood under these circumstances. On the high tableland of Mexico he found from 6,000,000 to 6,500,000 reds in the blood of adults and only a little less in pregnant women, while at still higher altitudes Viault found 8,000,000 (at Morococha, altitude 4,392 meters, over 12,000 feet). The amount of oxygen absorbed by the blood of animals exposed to a rarefied atmosphere in an air cabinet (Regnard) was 25 per cent. more than in the control animals under ordinary atmospheric pressure.

Upsala Läkareförenings Förhandlingar

XVIII, No. 4, pp. 191-269. Last indexed April 12, pp. 1198

189 Visualization of Movements. (Ges det visuella rörelseförnimmelser?) H. Ohrvall.
190 *Rupture of Spleen from Contusion. (Om subkutana traumatiska mjälrupturer och deras behandling.) L. Norrlin.
191 Technic for Artificial Pneumothorax. (En kanyl för anläggande af pneumothorax.) E. Lindhagen.
192 Tests for Color Blindness. (Holmgrens sefirgarnsmetod och pröfningen af järnvägspersonalens färgsinne.) G. F. Göthlin.

190. Summarized in THE JOURNAL July 12, page 150.